SOLID WASTE MANAGEMENT UNIT ASSESSMENT REPORT
SITE 71, THE BUILDING 3909 WEAPONS CLEANING AREA

9/30/92 -4304

0. 86

State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management

September 30, 1992

James G. Martin, Governor
William W. Cobey, Jr., Secretary

William L. Meyer
Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. R. D. Nelson
Natural Resources and
Environmental Affairs Officer
United States Marine Air Corps Station
Cherry Point, North Carolina 28533-5001

Re: Hazardous Waste Management Permit
Issuance of Final Permit
U.S. Marine Corps Air Station, Cherry Point
Facility ID Number: NC1170027261

Dear Mr. Nelson:

This Notice of Final Permit Decision and the Resource, Conservation and Recovery Act (RCRA) permit for United States Marine Corps Air Stations, Cherry Point are enclosed. This permit identifies specific wastes and associated management practices that may be handled in accordance with the North Carolina Hazardous Waste Management Rules. The enclosed permit, in conjunction with the permit to be issued by the United States Environmental Protection Agency, will constitute the RCRA permit for United States Marine Corps Air Station, Cherry Point. The EPA permit will be transmitted under a separate cover.

If there are any questions concerning the permit or the appeal procedure, please contact Karim Pathan of my staff at (919) 733-2178.

Sincerely,

Jerome H. Rhodes

Jerome H. Rhodes, Chief
Hazardous Waste Section

JHR/AKP/mb/147

Enclosure

cc: G. Alan Farmer, US EPA, Region IV
John C. Lank, Jr., US EPA, Region IV
A. Preston Howard, DEM
William F. Hamner
James A. Carter
Dick Denton
A.Karim Pathan
Tyler B. Harris
Craven County Manager
Elizabeth P. Joyner, Director
Craven County Health
Ralph Kennedy
Havelock Town Manager
Roger Schecter, Coastal Management

NOTICE OF FINAL RCRA PERMIT DECISION

FACILITY NAME: United States Marine Corps Air Station

EPA ID Number: NC1170027261

Location: NC Highway 101 and US 70
Cherry Point
North Carolina

Facility Operator: U.S. Marine Corps Air Station, Cherry Point
Facility Owner: U.S. Department of the Navy

After due consideration of the facts applicable to the above named facility as they appear in the Administrative Record and the requirements and policies expressed in the Resource Conservation and Recovery Act (RCRA) and applicable state regulations (15A NCAC 13A), the Department has determined that the permit should be issued with the changes to the Draft Permit noted in the attached response to comments. This response to comments addresses those comments relevant to this permit.

In accordance with 40 CFR 124.15 as adopted in 15A NCAC 13A .0005, the permit will become effective on October 30, 1992 unless a review is requested under 40 CFR 124.19 as adopted in 15A NCAC 13A .0005. A review may be requested by filing a written petition to the Officer of Administrative Hearings, Post Office Drawer 27447, Raleigh, North Carolina 27611-7447, and by serving a copy of the petition to John Hunter, Processing Agent, Department of Environment, Health and Natural Resources, 512 North Salisbury Street, Raleigh, North Carolina 27611.

The Administrative Record, with respect to this determination, is maintained at the Department's offices, 401 Oberlin Road, Suite 150, Raleigh, North Carolina 27605, and is available for public inspection between the hours of 9:00 a.m. and 4:00 p.m. Monday through Friday. For further information on this permit action or fileroom appointments, contact the File Room at (919) 733-2178.

Jerome H. Rhodes

Jerome H. Rhodes, Chief
Hazardous Waste Section

9-29-92
Date

JHR/AKP/mb/146

RESPONSE TO COMMENTS
US MARINE CORPS AIR STATION, CHERRY POINT
NC1170027261

PUBLIC COMMENT PERIOD
AUGUST 12, 1992 THROUGH SEPTEMBER 25, 1992

The following is the response to the comments received from US Marine Corps Air Station, Cherry Point on September 22, 1992.

Comment 1.

Page I-7, paragraph I.4. and page V-2 paragraph E.5. These paragraphs require that the Point of Compliance well to be located at RFI Unit 10 be completed within 60 days of the effective date of the permit. Request that this time period be changed to 180 days to allow a sufficient time period for compliance with federal acquisition regulations and well permit application submittal and approval.

Response: Paragraph I.4. on page I-7 and paragraph E.5. on page V-2 are revised to reflect the Point of Compliance well to be completed within one hundred eighty (180) days of the effective date of the permit.

Comment 2.

Page V-5, paragraph G.4. This paragraph requires that corrective action system design plans be submitted "...within ninety days after approval of the remedial action system..." and that "Construction shall be completed within 180 days of the approval by all applicable parties." Request that this paragraph be changed to allow that these tasks be completed in accordance with an approved schedule submitted by the Air Station as required by the 3008(h) Administrative Order on Consent.

Response: The permit should become the primary document for the compliance schedules when issued and effective. Any changes to the compliance schedules in the permit can be processed as modifications. The schedule given in the permit is adequate and also consistent with your request in the comment number 16.

Comment 3.

Responsible Contact Person. The RCRA Part B Permit Application, Part B, page B-3 designates Steve T. Simmons, Supervisory Environmental Engineer as the "...contact person responsible for the day-to-day HW management program at MCAS Cherry Point...." Request that the contact person be changed to Mahlon K. Yokley, Supervisory Environmental Engineer.

Response: We acknowledge the change in the facility contact. Please, submit the revised pages in Part A and Part B of the permit application.

Comment 4.

Page I-3, paragraph 9, Inspection and Entry. Currently there are no hazardous waste storage areas or accumulation sites located in classified areas. However, the occasion may arise in the future when such a situation does exist. Similarly, in situations of national emergencies or general mobilizations access to the Air Station may be restricted, thereby affecting what may be perceived as "...reasonable times...." In view of these situations, request that the following paragraphs be added to this section:

e. The Department recognizes that entry to areas which are classified or which require security clearances in order to access may be denied or delayed and that access will not be demanded until such time as appropriate clearances are obtained or until access is granted by the Air Station's Security Manager.

f. The Department recognizes that during periods of national emergencies or general mobilizations, it may be denied or granted only restricted access to the Air Station facilities. In this event, the Department or authorized representative will reschedule the inspection or inspect only those areas to which access is granted.

Response: The language used in the permit is adequate. National emergencies or general mobilizations will not be construed as reasonable times for inspection.

Comment 5.

Page 15 of 28, Section II.D. In the event that several field investigations are required at a particular site (in order to fully define the nature and extent of contamination), request EPA clarify if an RFI Workplan submission will be required for each field investigation. If no, request EPA clarify the same procedures apply as outlined in our September 3, 1992 letter concerning additional field work at Units 10 and 16. If the new workplan submissions procedures are used (i.e. cover letter with a brief description of work to be performed as an enclosure) recommend we document field work results in a Technical Direction Memorandum (TDM).

Response: This comment is addressed by EPA Region IV since it is related to HSWA draft permit.

Comment 6.

Page 20 of 29, II.F.1. Again, we request omission of the requirement for submission of CMS plan. The CMS plan is part of the overall CMS submission procedure as already defined in the Consent Order.

Response: This comment is addressed by EPA Region IV since it is related to HSWA draft permit.

Comment 7.

Page 23 of 29, Section II.J.2. The HSWA permit for MCAS includes specific language concerning requests for extensions to the due dates specified within the permit. We request that the EPA add the following language to this section of the permit modification to clarify the procedures and acceptable rationales for the Navy/Marine Corps to request extensions to the due dates for submittals (Note: This text is taken from HSWA permits for other Navy/Marine Corps facilities):

Comment 8.

II.J.2.a. - Requests for an Extension. Within 15 days of any anticipated need for a change in the corrective action compliance schedule, the Permittee shall submit a request for an extension to the Regional Administrator for approval.

Comment 9.

II.J.2.a.1. - Contents for a Request for an Extension - Any request for an extension by the Permittee shall be submitted in writing and shall specify the following:

a. The corrective action requirement that is sought to be extended,

b. The length of the extension sought,

c. The good cause(s) for the extension; and

d. Any related corrective action requirement that would be affected if the extension were granted.

Comment 10.

II.J.2.a.1.i. - What constitutes Good Cause - Good cause exists for an extension when sought in regard to the following:

a. An event of Force Majeure (as outlined in the Consent Order);

b. A delay caused by the good faith invocation of dispute resolution or the initiation of judicial action;

c. A delay caused, or which is likely to be caused, by the grant of an extension in regard to another corrective action requirement; and

d. Any other event or series of events mutually agree to by the Permittee and the U.S. EPA as constituting good cause.

Comment 11.

II.J.2.a.2 - Disposition of the Request - U.S. EPA Review - Upon receipt of a request for an extension for corrective action activities from the Permittee, the U.S. EPA shall review the request and approve, modify and approve, or disapprove the request within fifteen (15) days. The U.S. EPA shall notify the Permittee of the decision of the request for an extension (approval, modifications or denial), and the basis for the modifications or denial which may have occurred through a phone conversation. The verbal communication shall be verified to the Permittee in writing.

Comment 12.

II.J.2.a.2.ii. - Denial or Dispute of the Request - If the request for an extension is not approved, or the Permittee does not agree with the modifications, the Permittee may seek modification of this permit through 40 CFR 124.5, or the Permittee may seek and obtain a determination through any available existing dispute resolution process for Federal Facilities Corrective Actions, that may be established by the Administrator of the U.S. EPA and the Office of the Secretary of the Navy.

Response to comments 7 through 12:

These comments are addressed by EPA Region IV since they are related to HSWA draft permit.

Comment 13.

General: We suggest that EPA add the following text concerning funding of corrective actions to the HSWA permit as II.K. FUNDING FOR CORRECTIVE ACTION ACTIVITIES (Note: The following text was taken from HSWA permits at other Navy/Marine Corps facilities):

II.K FUNDING FOR CORRECTIVE ACTION ACTIVITIES

II.K.1. It is the expectation of the U.S. EPA and the Permittee that all obligations of the Permittee, for the facility MCAS Cherry Point (located in Havelock, North Carolina), arising under this permit will be fully funded. The Permittee agrees to seek sufficient funding through the Department of Defense (DoD) budgetary process to fulfill its obligations under this permit.

II.K.2. Congressional Annual Reports - The Permittee shall include in its annual reports to Congress, pursuant to CERCLA 120 (e) (5), (42 U.S.C. 9620 (e) (5)), the specific cost estimates and budgetary proposals associated with the implementation of corrective action requirements for this permit. A copy of the Congressional annual report shall be maintained by Navy/Marine Corps.

II.K.3. Obligation of Funds - Federal Facilities are required by Section 6001 of RCRA (42 U.S.C. 6961) to comply with all Federal and State requirements of RCRA. However, any

requirements for the payment or obligation of funds, by the Permittee, established by the terms of this permit, shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation of payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. Section 1341. In cases where payment of obligation or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted.

II.K.4. Authorized Funding - Funds authorized and appropriated annually by Congress under the "Environmental Restoration, Defense" appropriation in the DoD Appropriation Act, and allocated to the Permittee by the DoD, will be the source of funds for corrective action activities at the MCAS Cherry Point facility required by this permit, consistent with the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 211 (10 U.S.C. Chapter 160). However, should the environmental Restoration Defense appropriation be inadequate in any year to meet the Department of the Navy CERCLA implementation requirements, the DoD has agreed to employ, and the Permittee shall follow, a standardized DoD prioritization process which allocates that year's appropriation in a manner which maximizes the protection of human health and the environment. A standardized DoD prioritization model shall be developed and utilized with the assistance of the U.S. EPA and the State.

Response: This comment is addressed by EPA Region IV since it is related to HSWA draft permit.

Comment 14.

General: In order to ensure that workplans and reports submitted by the Navy/Marine Corps will receive a timely review by the EPA, we request that the EPA add a section (III.J.5. EPA REVIEWS OF REQUIRED SUBMITTALS) to this permit that specifies the time EPA will require to review and comment on the required submittals. We suggest that EPA specify a review time of one hundred twenty (120) days per submittal, and that if the EPA does not provide comments to the Navy/Marine Corps within this review period, the EPA thereby confers tacit approval of the submittal.

Response: This comment is addressed by EPA Region IV since it is related to HSWA draft permit.

Comment 15.

Page BB-2, Appendix BB, in regard to the installation of new "point of compliance well" at Unit 10, sixty (60) days is insufficient time for procurement and completion of well installation. We would require one hundred eighty (180) days from the effective date of the permit.

Response: Second paragraph on page BB-2, Appendix BB is revised to reflect the Point of Compliance well to be installed within one hundred eighty (180) days of the effective date of the permit.

Comment 16.

Page CC-2, Appendix CC, INSPECTIONS - Currently, field work at Unit 10 is ongoing as we are attempting to define the extent of contamination. As such, we will not be able to submit a general inspection schedule with the remedial action system design plans within ninety (90) days after the effective date of the permit. A CMS and selection of the corrective measures technology (which follows the completion of field work and submission of an RFI report) should be done before design plans are drafted. The general inspection schedule can be submitted ninety (90) days after the approval of the remedial action system for Unit 10.

Response: Page CC-2, Appendix CC, INSPECTIONS - Text is revised to read "----- within ninety (90) days after the approval of the remedial action system for RFI Unit 10."

Comment 17.

Question for Clarification. Once issued, will the HSWA permit have to be modified to permit groundwater pump and treat systems to be installed aboard the Air Station or will they be operated under a Special Order by Consent or some other mechanism?

Response: This comment is addressed by EPA Region IV since it is related to HSWA draft permit.

CHANGES BASED ON THE AGENCY COMMENTS
US MARINE CORPS AIR STATION, CHERRY POINT
NC1170027261

Permit Condition	Basis for Change
Permit	Second line of the second paragraph - "----- in Parts I through IX," is changed to "----- in Parts I through X,"
I.D.15.b.	Revised to agree with permit condition IV.J.2. for fifteen (15) days written submission requirement.
I.F.	"or cost estimates" is deleted in the paragraph at the end of this permit condition.
Part III	"(Attachment 1)" is added after the word "application" in the second line of first paragraph.
VI.2.c.	In the last line "--- condition VI.I." is changed to "condition VI.H"
VI.G.1.b.	In the fifteenth (15) line "--- and 270.32(b)(3)" is changed to "270.32"

AKP/mb/1-8
USMCCP.AKP

I.D. NUMBER NC1170027261
PERMIT NO. NC1170027261

DATE ISSUED: September 30, 1992

HAZARDOUS WASTE MANAGEMENT PERMIT

Permittee: US Marine Corps Air Station
NC Highway 101 & US 70
Cherry Point, North Carolina

Owner: Department of the Navy
US Marine Corps Air Station
Cherry Point, N.C. 28533

Pursuant to the 15A NCAC 13A North Carolina Hazardous Waste Management Rules, a permit is issued to the United States Marine Corps Air Base, hazardous waste management facility located in Cherry Point, Craven County on NC Highway 101 and US 70, at latitude 34° 55' 17" N and longitude 76° 53' 36" W.

The Permittee must comply with all terms and conditions of the permit. This permit consists of the conditions discussed in Parts I through X, the applicable regulations contained in 15A NCAC 13A including the applicable provisions of 40 CFR Parts 260 through 264, 266, 268, 270 and 124, statutory requirements of N.C.G.S. 130A-Article 9 (Solid Waste Management Act as amended) and the attached Application. Applicable regulations are those which are in effect on the date of issuance of this permit [40 CFR 270.32(c) as adopted in 15A NCAC 13A .0013] and are attached. This permit is based on the assumption that the information submitted in the permit application and as modified by subsequent amendments (hereafter referred to as the application) is accurate and that the facility will be operated as specified in the application. Any inaccuracies found in this information could lead to the termination or modification of this permit and potential enforcement action [40 CFR 270.41, 270.42, and 270.43 as adopted in 15A NCAC 13A .0013]. The Permittee shall inform the North Carolina Department of Environment, Health, and Natural Resources of any deviation from or changes in the information in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This permit is effective as of October 30, 1992, and shall remain in effect until October 30, 2002, [40 CFR 270.50 as adopted in 15A NCAC 13A .0013] unless revoked and reissued, terminated or continued in accordance with 40 CFR 270.51 as adopted in 15A NCAC 13A .0013.

William L. Meyer

William L. Meyer, Director
Solid Waste Management Division

September 30, 1992
Date

CHERRYPT.PMT/1-90

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ATTACHMENT 3
RCRA Facility Assessment (RFA) Report dated June 1988

ATTACHMENT 4
Copy of 3008(h) Administrative Order

ATTACHMENT 5
Copy of Interim Measures and RFI Workplan Approval Letter

PART I - STANDARD CONDITIONS

A. EFFECT OF PERMIT

The Permittee is allowed to store hazardous waste and conduct post-closure care and corrective action for ground water contamination in accordance with the conditions of this permit. Any storage, treatment, or disposal of hazardous waste not authorized in this permit is prohibited. Compliance with this permit constitutes compliance, for purposes of enforcement, with the N.C. Hazardous Waste Management Rules (15A NCAC 13A) and NCGS 130A-Article 9 (Solid Waste Management Act as amended). Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under any law governing protection of public health or the environment for any imminent and substantial endangerment to human health or the environment.

The Administrative Order On Consent, U.S. Docket No.: 89-13-R that became effective on December 4, 1989 is hereby incorporated into this Permit by reference. A copy of the document is included as Attachment 4. Pursuant to the Section 3008(h) Consent Order the facility has submitted Interim Measures and RCRA Facility Investigation Workplans. These workplans have been approved. A copy of the approval letter is included as Attacment 5.

B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR 270.41, 270.42, and 270.43 as adopted in 15A NCAC 13A .0013. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. DUTIES AND REQUIREMENTS

1. Duty to Comply. The Permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued under 40 CFR 270.61 as adopted in 15A NCAC 13A .0013. Any permit noncompliance constitutes a violation of N. C. Hazardous Waste Management Rules and N.C.G.S. 130A-Article 9 (Solid Waste Management Act as amended) and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.

2. Duty to Reapply. If the Permittee will continue an activity allowed or required by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least 180 days before this permit expires. Owners and operators of hazardous waste management units must have a permit during the active life of the unit and for any period necessary to comply with the corrective action requirements of Part VI of this permit.

3. Permit Review Period. This permit shall be reviewed by the Secretary of the Department of Environment, Health, and Natural Resources or his designee (hereafter referred to as Department) five (5) years after the date of issuance and modified as necessary as required under 40 CFR 270.50(d) as adopted in 15A NCAC 13A .0013.

4. Permit Expiration. This permit and all conditions therein will remain in effect beyond the permit's expiration date and until a decision is made concerning issuance of a new permit if the Permittee has submitted a timely, complete application (see 40 CFR 270.14-270.29 and 270.10 as adopted in 15A NCAC 13A .0013) and through no fault of the Permittee, the Department has not issued a new permit as set forth in 40 CFR 124.15 as adopted in 15A NCAC 13A .0005.

5. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. Duty to Mitigate. The Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

7. Proper Operation and Maintenance. The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of the permit.

8. Duty to Provide Information. The Permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

9. Inspection and Entry. The Permittee shall allow the Department or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

   a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

   d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the N. C. Hazardous Waste Management Rules, any substances or parameters at any location.

10. Monitoring and Records.

   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261 as adopted in 15A NCAC 13A .0006 and as stated in Appendix C-5 of the application. Laboratory methods must be those specified in Appendix C-5 of the application.

   b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least three (3) years from the date of the sample, measurement, report or record. These periods may be extended by request of the Department at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

      As a generator of hazardous waste, the Permittee shall retain on-site a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation produced pursuant to 40 CFR Part 268 for at least five years from the date that the waste which is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal, or until corrective action is completed, whichever date is later. These periods may be extended by request of the Regional Administrator at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

c. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

11. Reporting Planned Changes. The Permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility.

12. Anticipated Noncompliance. The Permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

13. Transfer of Permits. This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 40 CFR 270.40, 270.41 and 270.42 as adopted in 15A NCAC 13A .0013. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR 264 as adopted in 15A NCAC 13A .0009 and 40 CFR 270 as adopted in 15A NCAC 13A .0013.

14. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date.

15. Twenty-four Hour Reporting. The Permittee shall report to the Department any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

a. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

b. Any information of a release or discharge of hazardous waste, or of a fire or explosion from the facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:

1. Name, address, and telephone number of the owner or operator;
2. Name, address, and telephone number of the facility;
3. Date, time, and type of incident;
4. Name and quantity of material(s) involved;
5. The extent of injuries, if any;
6. An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
7. Estimated quantity and disposition of recovered material that resulted from the incident.

A written submission shall also be provided within fifteen (15) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times), and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

16. Other Noncompliance. The Permittee shall report all other instances of noncompliance not otherwise required to be reported at the time monitoring reports are submitted. The reports shall contain the information listed in Condition I.D.15.

17. Other Information. When the Permittee becomes aware that he failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Department, the Permittee shall promptly submit such facts or information.

E. SIGNATORY REQUIREMENTS

All reports or other information submitted to the Department shall be signed and certified according to 40 CFR 270.11 as adopted in 15A NCAC 13A .0013.

F. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE

The Permittee shall maintain at the facility, until closure and post-closure activities are completed and certified by an independent registered professional engineer, the following documents and amendments, revisions and modifications to these documents:

1. Waste analysis plan submitted in accordance with 40 CFR 264.13 as adopted in 15A NCAC 13A .0009 and Part C-2 and Appendix C-5 of the application (Attachment 1).

2. Personnel training documents and records submitted in accordance with 40 CFR 264.16(d) as adopted in 15A NCAC 13A .0009 and Part H of the application (Attachment 1).

3. Contingency plan submitted in accordance with 40 CFR 264.53(a) as adopted
in 15A NCAC 13A .0009 and Part G of the application (Attachment 1).

4. Closure plan submitted in accordance with 40 CFR 264.112(a) as adopted in 15A NCAC 13A .0009 and Part I of the application (Attachment 1).

5. Operating record required by 40 CFR 264.73 as adopted in 15A NCAC 13A .0009.

6. Inspection schedules developed in accordance with 40 CFR 264.15(b) as adopted in 15A NCAC 13A .0009 and Part F-2 of the application (Attachment 1).

7. Corrective action system operation and maintenance plans submitted in accordance with 40 CFR 264.100 and 40 CFR 264.101 as adopted in 15A NCAC 13A .0009 and Condition V.G. and Appendix CC of this permit;

8. Groundwater monitoring records necessary to develop reports required by 40 CFR 264.100 as adopted in 15A NCAC 13A .0009 and Condition I.D.10.b-c of this permit;

9. Corrective action plans and reports required by 40 CFR 264.100, 264.101 as adopted in 15A NCAC 13A .0009 and this permit;

10. Post-closure plan required by 40 CFR 264.118 as adopted in 15A NCAC 13A .0009 and Condition II.P. of this permit;

11. Documentation of compliance with 40 CFR 264.116, 264.119, and 264.120 as adopted in 15A NCAC 13A .0009 and this permit;

12. A survey plat and record of the type, location and quantity of hazardous waste or hazardous constituents disposed of within each cell or area of the facility (to include solid waste management units) as required by 40 CFR 264.119 as adopted in 15A NCAC 13A .0009 and this permit; and

13. All reports and documentation of compliance with the post-closure plan as specified in 40 CFR 264.118(b)(1) and (2) as adopted in 15A NCAC 13A .0009 and this permit during the post-closure period.

All amendments, revisions and modifications to any plan required by this permit shall be submitted to the Department for approval and/or permit modifications.

G. ANNUAL REPORT

The Permittee shall prepare and submit an annual report by March 1 of each year in accordance with 15A NCAC 13A .0001. The report shall include, in accordance with 40 CFR 264.75 as adopted in 15A NCAC 13A .0009, the following information for facility activities during the previous calendar year:

1. The EPA identification number, name, and address of the facility;

2. The calendar year covered by the report;

3. For off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator;

4. A description and the quantity of each hazardous waste the facility received during the year; for off-site facilities, this information must be listed by EPA identification number of each generator;

5. The method of treatment, storage, or disposal of each hazardous waste;

6. For generators who treat, store, or dispose of hazardous waste on-site, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated;

7. For generators who treat, store, or dispose of hazardous waste on-site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984; and

8. The certification signed by the owner or operator of the facility or his authorized representative.

H. MANIFEST SYSTEM

1. The Permittee shall utilize the manifest system when receiving hazardous waste from off-site in accordance with 40 CFR 264.71 as adopted in 15A NCAC 13A .0009 unless the Permittee submits an unmanifested waste report in accordance with 40 CFR 264.76 as adopted in 15A NCAC 13A .0009.

2. The Permittee shall report any manifest discrepancies in accordance with 40 CFR 264.72 as adopted in 15A NCAC 13A .0009.

I. DOCUMENTS TO BE SUBMITTED PRIOR TO OPERATION

The Permittee shall submit three (3) copies of any documents described below prior to operation.

1. The Permittee shall submit as-built blueprints and specifications for the remedial action system that is constructed in accordance with this permit no later than thirty (30) days prior to operation.

2. The Permittee shall submit the operation and maintenance items, required by Condition V.G.7. of this permit, no later than thirty (30) days prior to operation of the remedial action system.

3. The Permittee shall submit the plans for the design, location, installation, and development of any additional wells to determine the effectiveness and progress of the corrective action system no later than thirty (30) days prior to the installation.

4. The Permittee shall submit a verification that the POC well identified in Condition V.C. and Appendix BB of this Permit has been installed. This verification is due no later than one hundred eighty (180) days from the effective date of the permit.

J. DEFINITIONS

For purposes of this permit, terms used herein shall have the same meaning as those in the North Carolina Hazardous Waste Management Rules and Solid Waste Management Law unless this permit specifically provides otherwise; where terms are not defined in 15A NCAC 13A, G.S. 130A - Article 9, the permit, or United States Environmental Protection Agency guidance documents and publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

K. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR 270.12 as adopted in 15A NCAC 13A .0013.

PART II - GENERAL FACILITY CONDITIONS

A. Authorized Waste. The Permittee is authorized to store the following hazardous waste(s) or categories of hazardous waste in accordance with the conditions specified in this permit:

Hazardous wastes and categories of hazardous waste are those listed in the Part A on pages 6, 6a, 6b, and 6c and in Appendices C-1, C-2, and C-4 of the application (Attachment 1).

The Permittee is also authorized to monitor and treat groundwater and implement post-closure care of the closed sludge pits (SWMU #I-10b) in accordance with the conditions specified in this permit.

B. Design and Operation of Facility. The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste constituents to air, soil or surface water which could threaten human health or the environment.

C. Required Notice for Receipt of Off-Site Wastes. When the Permittee receives hazardous waste from an off-site source (except where the Permittee is also the generator), he must inform the generator in writing that he has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The Permittee shall keep a copy of this written notice as part of the operating record.

D. General Waste Analysis. The Permittee shall follow the procedures described in the waste analysis plan as indicated in Part C-2 and Appendix C-5 of the application (Attachment 1). Results of these analyses shall be maintained as per 40 CFR 264.13 as adopted in 15A NCAC 13A .0010 and as identified in Condition I.D.10. The Permittee shall verify his waste analysis as part of the quality assurance program. The quality assurance program will be in accordance with current EPA practices or equivalent methods approved by the Department, and at a minimum shall ensure that the Permittee maintains proper functional instruments, uses approved sampling and analytical methods, assures the validity of sampling and analytical procedures, and performs correct calculations.

E. Security. The Permittee shall comply with the security provisions of 40 CFR 264.14(b) and (c) as adopted in 15A NCAC 13A .0009 and as described in Part F-1 of the application (Attachment 1).

F. General Inspection Requirements. The Permittee shall follow the inspection schedule as described in Part F-2 of the application (Attachment 1) and shall comply with 40 CFR 264.15(c) and (d) as adopted in 15A NCAC 13A .0009.

G. Personnel Training. The Permittee shall conduct personnel training in accordance with 40 CFR 264.16 as adopted in 15A NCAC 13A .0009 and as described in Part H of the application (Attachment 1).

H. General Requirements for Ignitable, Reactive, or Incompatible Waste. The Permittee shall comply with the requirements of 40 CFR 264.17(a) and (c) as adopted in 15A NCAC 13A .0009.

I. Required Equipment. The Permittee shall equip the facility and make readily available to operating personnel the necessary equipment to carry out the contingency plan, as described in Part G-5 and Table G-5 of the application (Attachment 1). At all times, the equipment requirement described in 40 CFR 264.32 as adopted in 15A NCAC 13A .0009 shall be met.

J. Testing and Maintenance of Equipment. The Permittee shall test and maintain the equipment specified in the previous permit condition and as identified in Part G-4h of the application (Attachment 1) as necessary to ensure its proper operation in time of emergency.

K. Access to Communications or Alarm System. The Permittee shall maintain access to the communications or alarm system as required by 40 CFR 264.34 as adopted in 15A NCAC 13A .0009.

L. Contingency Plan.

1. Implementation of Plan. The Permittee shall immediately carry out the provisions of the contingency plan whenever there is a fire, explosion, or release of hazardous waste or constituents which threatens or could threaten human health or the environment as required by 40 CFR 264.56 as adopted in 15A NCAC 13A .0009.

2. Copies of Plan. The Permittee shall comply with the requirements of 40 CFR 264.53 as adopted in 15A NCAC 13A .0009.

3. Amendments to Plan. The Permittee shall review and immediately amend, if necessary, the contingency plan, in accordance with 40 CFR 264.54 as adopted in 15A NCAC 13A .0009.

4. Emergency Coordinator. The Permittee shall comply with the requirements of 40 CFR 264.55 as adopted in 15A NCAC 13A .0009, concerning the emergency coordinator.

M. Manifest System. The Permittee shall comply with the manifest requirements of 40 CFR 264.71, 264.72, and 264.76 as adopted in 15A NCAC 13A .0009.

N. Recordkeeping and Reporting.

1. Operating Record. The Permittee shall maintain a written operating record at the facility in accordance with 40 CFR 264.73(a), (b)(1), (2), (3), (4), (5), (6), (7), (9), (15), and (16) as adopted in 15A NCAC 13A .0009.

2. Annual Report. The Permittee shall comply with the annual report requirements of 40 CFR 264.75 as adopted in 15A NCAC 13A .0009 and as amended by 15A NCAC 13A .0001.

O. Closure.

1. Performance Standard. The Permittee shall close the facility in accordance with the closure plan as described in Part I of the application (Attachment 1) and as required by 40 CFR 264.111 as adopted in 15A NCAC 13A .0009.

2. Amendment to Closure Plan. The Permittee shall amend the closure plan in accordance with 40 CFR 264.112(c) as adopted in 15A NCAC 13A .0009 whenever necessary.

3. Notification of Closure. The Permittee shall notify the Department in writing at least forty-five (45) days prior to the date he expects to begin closure.

4. Time Allowed For Closure. Within ninety (90) days after receiving the final volume of hazardous waste, the Permittee shall treat or remove from the site all hazardous waste in accordance with the schedule specified in the closure plan. After receiving the final volume of hazardous waste, the Permittee shall complete closure activities in accordance with the schedule specified in the closure plan in Part I-1e on pages I-5 and I-9, and Tables I-1 and I-2 of the application (Attachment 1).

5. Disposal or Decontamination of Equipment. The Permittee shall comply with the requirements of 40 CFR 264.114 as adopted in 15A NCAC 13A .0009.

6. Certification of Closure. The Permittee shall certify that the facility has been closed in accordance with the specifications in the closure plan as required by 40 CFR 264.115 as adopted in 15A NCAC 13A .0009.

P. Post-Closure. The Permittee shall monitor, maintain, and perform post-closure care of the facility as described in Section B of the application (Attachment 2), and as required under 40 CFR 264.117 and 264.228 as adopted in 15A NCAC 13A .0009.

Q. Special Conditions.

1. When a discrepancy exists between the wording of an item in the application and this permit, the permit requirements take precedence over the application.

2. Where a discrepancy exists between the RCRA Facility Assessment (RFA) report (Attachment 3) and this permit as to the future requirements to be taken at the facility, the permit requirements take precedence over the requirements reflected in the report.

3. The Permittee shall comply with the Organic Air Emissions Requirements of 40 CFR 264 Subpart AA (for process vents), Subpart BB (for equipment leaks) as adopted in 15A NCAC 13A .0009, and 40 CFR 270.24 and 270.25 as adopted in 15A NCAC 13A .0013 as applicable.

PART III - STORAGE IN CONTAINERS

There are two (2) hazardous waste storage facilities. These facilities are described in Part D of the permit application (Attachment 1). Mostly 55-gallon containers are used; however, a smaller number of containers ranging in size 5-gallon to 40-gallon are also used. A number of 65-gallon and 85-gallon drums are used for overpacking of leaking or damaged 55-gallon drums. The storage capacity is based on 55-gallon drums. The total maximum capacity for both the facilities is 418,990 gallons. An adequate containment capacity of ten percent (10%) or more is provided for all the storage areas. A maximum of four (4) drums will be stored on each wooden pallet and will be stacked no more than two (2) pallet high. Containers holding wastes which are incompatible are separated by means of bermed or segregated cells. Listed below are the storage facilities and volumes for each facility.

Facility Maintenance Department Hazardous Waste Storage Facility:

Appendix B-3 and Figure I-2, in the application (Attachment 1), show a plan of this facility. This facility has three (3) 36 foot long by 12 foot wide container storage structures with six (6) inch concrete pad, a concrete berm completely surrounding the periphery and an overhead roof. Each structure has a maximum storage volume of ninety-six (96) 55-gallon drums (5,280 gallons). Incompatible wastes are stored in separate structures.

DRMO Hazardous Waste Storage Facility:

This facility consist of the old section and the new section. Appendix B-5, in the application (Attachment 1), shows a plan and construction details for this facility. This facility has a total drum storage capacity of 7,330 55-gallon drums (403,150 gallons).

The old section is right triangular shaped concrete pad with approximate dimensions of 205 feet x 235 feet x 286 feet. This section consist of a six (6) inch thick concrete pad with a six (6) inch high concrete berm along all sides. The old section is divided into two (2) areas: 1) General Storage Area and 2) Incompatible Waste Storage.

The maximum volume for the General Storage Area is 5,364 55-gallon drums (295,020 gallons). Flammable liquids are stored in this section. The Incompatible Waste Storage Area consist of three (3) concrete bermed cells, two (2) with dimensions of 45 feet x 25 feet and a third with dimension of 45 feet x 30 feet in the southwest corner of this pad. The maximum volume for all the cells is 1,136 55-gallon drums (62,480 gallons). Corrosives, toxics and reactives are stored in these cells separately.

The new section adjoins the west side of the old section and is roughly rectangular in shape with over 21,000 square feet of storage area. The new section consist of an eight (8) inch thick concrete pad with a six (6) inch high concrete berm on the north, east and south sides. The maximum volume for the new section is 830 55-gallon drums (45,650 gallons). Flammable solids will be stored in this section.

A. Condition of Containers. If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or manage the waste in some other way that complies with the requirements of this permit.

B. Compatibility of Waste with Containers. The Permittee shall comply with 40 CFR 264.172 as adopted in 15A NCAC 13A .0009 and ensure that the ability of the container to contain the waste is not impaired.

C. Management of Containers. The Permittee shall manage containers in accordance with 40 CFR 264.173 as adopted in 15A NCAC 13A .0009 and as described in Part D-1d of the application (Attachment 1).

D. Inspections. The Permittee shall inspect container storage areas in accordance with 40 CFR 264.174 as adopted in 15A NCAC 13A .0009 and as described in Part F-2 of the permit application (Attachment 1).

E. Aisle Space. At a minimum, the Permittee shall maintain aisle space as required by 40 CFR 264.35 as adopted in 15A NCAC 13A .0009. A minimum of four (4) feet of aisle space is maintained between the rows of containers.

F. Containment. The Permittee shall comply with the requirements of a containment system found in 40 CFR 264.175(b)(1)-(5) as adopted in 15A NCAC 13A .0009, including having a base which is free of cracks and gaps and is able to contain leaks, spills and accumulated rainfall until such time that the material is detected and removed. The containment system must be designed for efficient drainage and have sufficient capacity to contain 10% of the total volume of containers. The Permittee shall maintain the containment system in accordance with Part D-1a of the permit application (Attachment 1).

G. Special Requirements for Ignitable or Reactive Waste. The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line.

H. Special Requirements for Incompatible Waste.

1. The Permittee shall not place incompatible wastes in the same container.

2. The Permittee shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material.

3. The Permittee shall not store a container of hazardous waste that is incompatible with any waste or material stored nearby in other containers, piles, open tanks or surface impoundments unless the container is separated from the other materials by a dike, berm, wall, or other device.

I. Closure. The Permittee shall follow the closure plan as described in Part I of the application (Attachment 1) and shall comply with 40 CFR 264.178 as adopted in 15A NCAC 13A .0009.

PART IV - POST-CLOSURE CARE

A. APPLICABILITY

The conditions of this Part apply to the closed waste sludge pits located within RFI Unit 10 as specified in 40 CFR 264.110(b)(2) as adopted in 15A NCAC 13A .0009.

B. POST-CLOSURE CARE PERIOD

Post-closure care procedures as described in Section B and Appendix 2-3 of the application (Attachment 2) and Part V of this permit shall continue throughout the effective period of this permit as specified in 40 CFR 264.117(a)(1) as adopted in 15A NCAC 13A .0009, unless otherwise modified under 40 CFR 264.117(a)(2) as adopted in 15A NCAC 13A .0009.

C. GROUNDWATER MONITORING AND CORRECTIVE ACTION

During the post-closure period the Permittee shall comply with the requirements of 40 CFR 264.91 through 264.100 as adopted in 15A NCAC 13A .0009 as specified under Part V of this permit for purposes of detecting, characterizing, and responding to releases of hazardous constituents to the uppermost aquifer for the closed areas as described in Section A, pages 2A-1 and 2A-2, and Section B of the application (Attachment 2) and in Appendix 2-3.

D. POST-CLOSURE CARE

1. The Permittee shall monitor and maintain the area that closed pursuant to 40 CFR Subpart G after January 26, 1983, for a minimum of thirty (30) years in accordance with Condition II.P. and as required under 40 CFR 264.117-120, 264.228, and 264.310 as adopted in 15A NCAC 13A .0009 and as described in the post-closure plan located in Section B and Appendix 2-3 of the application (Attachment 2).

2. The Permittee shall provide and maintain the items required by Conditions V.G.7. and V.G.8. of this permit as to the operation and maintenance of the remedial action system.

E. REPORTING, RECORDKEEPING, AND RESPONSE

The Permittee shall enter all monitoring, testing, analytical data, inspection, and maintenance reports obtained pursuant to Condition V.I. in the operating record, as required by 40 CFR 264.73(b)(6) as adopted in 15A NCAC 13A .0009.

PART V - GROUND WATER PROTECTION

A. APPLICABILITY

The requirements of this part apply to the closed area as described in Section A, pages 2A-1 and 2A-2 of the application (Attachment 2) and as specified under 40 CFR 264.90 as adopted in 15A NCAC 13A .0009. The waste sludge pits, the regulated units, are located within RFI Unit 10, the old sanitary landfill.

B. GROUND WATER PROTECTION STANDARD

The ground water protection standard as required under 40 CFR 264.92 as adopted in 15A NCAC 13A .0009 shall consist of Table V-1 below, which lists the hazardous constituents and their respective concentration limits as required under 40 CFR 264.93, and 264.94.

TABLE V-1 GROUND WATER PROTECTION STANDARD

Hazardous Constituents	Concentration Limit
Arsenic	0.05 ppm
Bis (2-Ethylhexyl) Phthalate	10 ppb
Chloroethane	10 ppb
1,1 Dichloroethane	5 ppb
1,1-Dichloroethylene	7 ppb
2,4-Dimethylphenol	10 ppb
Dichlorodifluoromethane	5 ppb
Methylene Chloride	5 ppb
2-Methylphenol	10 ppb
3-Methylphenol	10 ppb
4-Methylphenol	10 ppb
Naphthalene	10 ppb
Phenol	10 ppb
Tetrachloroethylene	5 ppb
1,1,1-Trichloroethane	200 ppb
Trichloroethene	5 ppb
Vinyl Chloride	10 ppb

C. POINTS OF COMPLIANCE

The point of compliance for the closed area shall be well numbers 10EGW05, 10EGW06, 10EGW07, 10GW18, 10GW25, 10GW42, and the Point of Compliance well to be installed at 10GW42 to form a well nest, as described in Condition V.E. and Appendix BB and as required by 40 CFR 264.95 and 264.99(a)(3) as adopted in 15A NCAC 13A .0009.

D. COMPLIANCE PERIOD

The compliance period shall be defined to begin with the effective date of the permit and continue for the greater of: ten (10) years; or until the ground water protection standard, specified in Condition V.B., has not been exceeded for a period of three (3) consecutive years and the corrective action under 40 CFR 264.100 as adopted in 15A NCAC 13A .0009 has been terminated as specified under Condition V.J. of this permit.

E. GROUND WATER MONITORING SYSTEM

The Permittee shall install and maintain a ground water monitoring system to comply with the requirements of 40 CFR 264.97, 264.99, and 264.100 as adopted in 15A NCAC 13A .0009.

1. The Permittee shall install and maintain ground water monitoring wells 10EGW05, 10EGW06, 10EGW07, 10GW17, 10GW18, 10GW25, 10GW34, 10GW35, 10GW42, and the Point of Compliance well to be installed at 10GW42 to form a well nest, at the locations specified on Map 2-1a in Appendix 2-1a of the application (Attachment 2) and Appendix BB of this permit. Additionally, the Permittee shall install and maintain effectiveness wells required by Condition V.F.4.

2. The Permittee shall construct and maintain the monitoring wells identified in Condition V.E.1. in accordance with the plans and specifications presented in Section C of the application (Attachment 2) and Appendix BB.

3. The Permittee shall locate, construct, and maintain the Point of Compliance well to be installed at 10GW42 to form a well nest such that the well is constructed using stainless steel or Teflon casings and screens and is screened at the most conductive zone utilizing five (5) foot screens as described in Appendix BB. This well shall be installed within thirty (30) days following approval of the well design.

4. The Permittee shall install and maintain any additional ground water monitoring well(s) for the purposes of determining the effectiveness and progress of the corrective action system as required by 40 CFR 264.100(d) as adopted in 15A NCAC 13A .0009. The plans for the design, location, installation, and development of any additional wells shall be submitted to the Department for approval at least thirty (30) days prior to the desired installation date.

5. The Permittee shall install the Point of Compliance well to be installed at 10GW42 to form a well nest within one hundred eighty (180) days of the effective date of this permit.

F. MONITORING REQUIREMENTS

The Permittee shall establish and implement a ground water monitoring program to demonstrate the effectiveness of the corrective action program. Ground water monitoring shall be conducted in conformance with the requirements for compliance monitoring considering 40 CFR 264.92, 264.99 and 264.100 as adopted in 15A NCAC 13A .0009. The Permittee shall determine ground water quality as follows:

1. The Permittee shall collect, preserve, and analyze ground water samples pursuant to Condition V.H.

2. The Permittee shall determine the concentration of hazardous constituents specified in Condition V.B. and pH, conductivity, temperature, and water level in the ground water at each monitoring well required by Condition V.E.1. throughout the compliance period including any extension to the compliance period as defined under Condition V.D. These determinations shall be made quarterly beginning no later than ninety (90) days after the effective date of this permit.

3. The Permittee shall establish the background ground water concentration in 10GW25 for the following hazardous constituents as identified in Table V-1. Background shall be established by analyzing quarterly samples for one (1) year, four replicates per sample, for each constituent in order to establish background mean and variance beginning within ninety (90) days after installation of the wells as specified under Condition V.E.3.

   Alternatively, the Permittee may accept as the ground water protection standard the practical quanitation limit established in 40 CFR 264 Appendix IX as adopted in 15A NCAC 13A .0009 Ground Water Monitoring List for the inorganic constituents contained in Table V-1 of this Permit.

4. The Permittee shall propose to monitor ground water monitoring wells, to demonstrate the effectiveness of the corrective action program for the sludge pits within RFI Unit 10. These ground water monitoring wells shall be permanent monitoring wells installed and maintained according to Condition V.E. and specified in Appendices AA and BB. The Permittee shall comply with any additional monitoring specified by the Department as required by 40 CFR 264.100(d) as adopted in 15A NCAC 13A .0009.

5. The Permittee shall record the water level in all compliance monitoring wells (i.e. Point of Compliance, recovery and effectiveness monitoring wells) before the ground water is sampled each time in accordance with Conditions V.F.2. and V.F.3.

6. The Permittee shall determine the ground water flow rate and direction in the uppermost aquifer at least annually as required under 40 CFR 264.99(e) as adopted in 15A NCAC 13A .0009; beginning one (1) year from

the effective date of the permit. This information shall be submitted in the form of a ground water potentiometric map, and ground water velocity calculations, along with all the data used to make these determinations.

7. The Permittee shall analyze samples from the point of compliance well(s), specified under Condition V.C., for all constituents in 40 CFR 264 Appendix IX as adopted in 15A NCAC 13A .0009 as identified in Appendix AA and any other constituents specified by the Department at least annually beginning one (1) year from the effective date of the permit to determine whether additional hazardous constituents are present in the uppermost aquifer. The Appendix IX analyses must be completed within 120 days of sampling. If the Permittee finds additional constituents present (one not listed in Condition V.B.), he or she may resample within one (1) month and repeat the Appendix IX analysis. If the second analysis confirms the presence of new constituents their concentrations shall be reported to the Department within seven (7) days after completion of the analyses.

8. The Permittee shall analyze samples quarterly from all monitoring wells specified under Condition V.E.1. for the parameters listed in Table V-1 with the additional following field measurements:

   pH
   Conductivity
   Temperature
   Water Level

9. The Permittee shall determine whether there is a statistically significant increase, for each parameter identified in Condition V.B., over the concentration limit for that parameter each time the concentration of hazardous constituents is monitored in ground water at the compliance point pursuant to Condition V.F.2. In determining whether such an increase has occurred, the Permittee must compare the ground water quality at each monitoring well specified in Condition V-C. in accordance with the procedures specified in Condition V.H. When evaluating the monitoring results the Permittee shall use the statistical procedures specified in Section C, pages 44 through 49, in the application (Attachment 2), in accordance with 40 CFR 264.97(h)(1) as adopted in 15A NCAC 13A .0009

10. If the Permittee chooses to perform a statistical evaluation, the Permittee shall perform the statistical evaluation required by Condition V.F.9. within sixty (60) days after completion of sampling.

11. If analysis of samples taken in accordance with Conditions V.F.7. and V.F.8. are below the ground water standard as specified under Condition V.B. at the point of compliance for three (3) consecutive years after the compliance period or corrective action period, whichever is greater, then the Permittee may submit an application for a permit modification pursuant to 40 CFR 270.41 as adopted in 15A NCAC 13A .0009 to establish

an alternate ground water monitoring program.

12. The Permittee must collect and analyze ground water samples quarterly from all monitoring wells specified in Condition V.E.1. for the parameters listed in Table V-1, and the parameters listed in Condition V.F.8. Once the corrective action program is approved, installed, and operating in areas of confirmed ground water contamination, the Permittee may request a permit modification to collect samples from each monitoring well listed in Condition V.E.1. at least semi-annually. The Permittee must analyze the samples for the parameters listed in Table V-1 and in Condition V.F.8.

G. CORRECTIVE ACTION PROGRAM

Corrective action for the sludge pits will be included with the corrective action for RFI Unit 10. All requirements in this Section will be consistent with the schedule for the corrective action of RFI Unit 10.

1. The Permittee shall initiate corrective action as required by Appendix CC, Section C of the application (Attachment 2), as stipulated by 40 CFR 264.100(c) as adopted in 15A NCAC 13A .0009 and Section VI of the Administrative Order of Consent, U.S. Docket Number: 89-13-R (Attachment 4).

2. The Permittee shall conduct a corrective action program to remove or treat in place any hazardous constituents under 40 CFR 264.93 as adopted in 15A NCAC 13A .0009 (Condition V.B.) that exceed the concentration limit under 40 CFR 264.94 as adopted in 15A NCAC 13A .0009 in ground water between the compliance point under 40 CFR 264.95 as adopted in 15A NCAC 13A .0009 (Condition V.C.) and the downgradient facility property line; and upon promulgation of regulations, beyond the facility boundary as required under 3004(v) of RCRA, as amended, and 40 CFR 264.101(c) as adopted in 15A NCAC 13A .0009, unless the Permittee can demonstrate to the satisfaction of the Department that despite the Permittee's best efforts, the Permittee was unable to obtain the necessary permission to undertake such action, or such action is not necessary to protect public health or the environment.

3. The corrective action program is as described in the plans and specifications in Section C of the application (Attachment 2) and Section VI of the Administrative Order of Consent, U.S. Docket Number: 89-13-R (Attachment 4) and as required by 40 CFR 264.100(e) as adopted in 15A NCAC 13A .0009. The equipment used for the corrective action program shall be known as the remedial action system.

4. The Permittee shall submit to the Department, and other appropriate persons construction design plans with data, blueprints, and a construction schedule for the remedial action system under Condition V.G.3. including recovery wells, effectiveness wells, pumps, piping, the wastewater treatment system, and all associated equipment within ninety (90) days after the approval of the remedial action system for RFI Unit 10. Construction shall be completed within 180 days of the approval by all applicable parties. The remedial action system plans shall also include all items outlined in Appendix CC.

The influence of the remedial action system shall, at a minimum, extend beyond the boundaries of the plume as identified in Section C of the application (Attachment 2) and Section VI of the Administrative Order of Consent, U.S. Docket Number: 89-13-R (Attachment 4). The remedial action system required under Condition V.G.3. shall be modified if it does not meet this requirement.

5. The Permittee shall submit data supporting the projected vertical and horizontal influence of the extraction system to the Department within ninety (90) days after the initiation of the corrective action system.

6. The Permittee shall treat, store, and dispose of all contaminated ground water in accordance with all applicable federal, state and local laws. At a minimum, the Permittee shall obtain the required NPDES or POTW approval from the appropriate authority.

7. The Permittee shall submit the following items as discussed in Appendix CC with respect to the operation and maintenance of the remedial action system, prior to the beginning of the corrective action program:

   a) Personnel Training - The Permittee shall prepare and implement a personnel training plan sufficient to train any personnel associated with the remedial action system.

   b) Contingency Plan - The Permittee shall prepare and implement, if necessary, a plan to be followed if there is a release from the remedial action system.

   c) Required Equipment - The Permittee shall include in a plan and provide, at all times, the necessary equipment to carry out the required contingency plan. The plan should also include the required testing and maintenance of equipment.

   d) Abandonment Plan - The Permittee shall include an abandonment plan for implementation following the completion of corrective action for the remedial action system.

8. The Permittee shall test and maintain the remedial action system as required in Appendix CC.

H. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the following techniques and procedures when obtaining samples and analyzing samples from the ground water monitoring wells described in Condition V.E.:

1. Samples shall be collected by the techniques described on pages 18 through 31 of the ground water sampling and analysis plan found in Section C of the application (Attachment 2) and Appendix AA of this permit.

2. Samples shall be preserved and shipped (when shipped off-site for analysis) in accordance with the procedures specified on pages 27 through 29 and page 32, respectively, of the ground water sampling and analysis plan found in Section C of the application (Attachment 2);

3. Samples shall be analyzed according to the procedures specified in Appendix AA and any subsequent procedure specified by the Department;

4. Samples shall be tracked and controlled using the chain of custody procedures specified on pages 34 and 35 of the ground water sampling and analysis plan found in Section C of the application (Attachment 2);

5. Samples shall be obtained using bailers or pumps and other sampling equipment that will not significantly interfere with the analysis; and

6. The sampling and analysis plan shall be updated to reflect any changes approved or required by the Department.

I. REPORTING, RECORDKEEPING, AND RESPONSE

1. The Permittee shall enter all monitoring, testing, and analytical data obtained pursuant to Condition V.H. in the operating record, as required by 40 CFR 264.73(b)(6) as adopted in 15A NCAC 13A .0009.

2. The Permittee must report in writing semi-annually to the Department on the effectiveness of the corrective action program, as required by 40 CFR 264.100(g) as adopted in 15A NCAC 13A .0009. This report shall also be made part of the operating record and shall include all monitoring, testing, and analytical data obtained under Conditions V.F., V.G., and V.H. This report shall also include proposals for improvements of the corrective action system in order to maintain compliance with Conditions V.E. and V.G.

3. The Permittee shall report concentrations of any additional Appendix IX constituents (identified pursuant to Condition V.F.7. and not listed in Table V-1) to the Department, and within seven (7) days after completion of analysis, as specified in 40 CFR 264.99(g) as adopted in 15A NCAC 13A .0009.

4. The Permittee shall report quarterly concentration levels for constituents identified in Table V-1 to the Department within sixty (60) days after completion of the ground water sampling event.

J. PERMIT MODIFICATION

1. If the Permittee determines that the corrective action program, required by this permit, no longer satisfies the requirements of the regulations, an application for a permit modification must be submitted within ninety (90) days to make any appropriate changes to the program, which will satisfy the regulations.

2. The Permittee must request a permit modification as described under Condition V.F.11. if it is desired to make a change in the ground water monitoring program following the completion of the necessary requirements.

3. If the Permittee determines that the compliance/corrective action monitoring program, required by this permit, no longer satisfies the requirements of the regulations, an application for a permit modification must be submitted within ninety (90) days to make any appropriate changes to the program, which will satisfy the regulations.

4. The Permittee must request a permit modification to include the extension of the corrective action system following the completion of the actions required under Condition V.G. and Appendix CC.

K. DUTY OF PERMITTEE

The Permittee must assure that monitoring and corrective action measures necessary to achieve compliance with the ground water protection standard under 40 CFR 264.92 as adopted in 15A NCAC 13A .0009 are taken during the term of the permit.

L. SPECIAL CONDITIONS

The Permittee shall conduct well abandonment in accordance with Title 15 NCAC 2C well construction standards; a certification, which reflects the abandonment procedure must be submitted.

The Division of Environmental Management can request the Permittee to continue additional remediation to comply with 15 NCAC 2L regulations after the requirements of the RCRA regulations have been met.

PART VI - CORRECTIVE ACTION

A. APPLICABILITY

The Conditions of this Part apply to:

1. The solid waste management units (SWMUs) and areas of concern (AOCs) identified in Appendix DD-page DD-2 of the permit, which require further investigation.

2. The SWMUs identified in Appendix DD-pages DD-3, DD-4, and DD-5 which require no further investigation at this time.

3. The SWMUs identified in Appendix DD-page DD-6 which require confirmatory sampling.

4. Any additional SWMUs or AOCs discovered during the course of ground-water monitoring, field investigations, environmental audits, or other means.

B. DEFINITIONS

For purposes of this Part, the following definitions shall be applicable:

1. A "hazardous constituent" for the purposes of this Part are those substances listed in 40 CFR Part 261 Appendix VIII as adopted in 15A NCAC 13A .0006

2. A "solid waste management unit" (SWMU) for the purposes of this Part includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for management of solid waste. RCRA regulated hazardous waste management units are also solid waste management units. Solid Waste Management Units include areas which have become contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g., product or process spills).

3. A "release" for purposes of this Part includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

4. "Contamination" for the purposes of this Part refers to the presence of any hazardous waste or hazardous constituents in a concentration which exceeds the background concentration of that waste or constituent in the immediate vicinity of the facility (i.e., in areas not affected by the facility).

5. The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial,

commercial, mining and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the atomic Energy Act of 1954, as amended (68 Stat. 923).

6. An "area of concern" for purposes of this Part includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Department to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act and 40 CFR 270.32(b)(2) as adopted in 15A NCAC 13A .0013 in order to ensure adequate protection of human health and the environment.

7. A "unit" for the purposes of this Part includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, or recycling unit.

8. "Corrective measures" for purposes of this Part, include all corrective action necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit, as required under 40 CFR 264.101 as adopted by 15A NCAC 13A .0009. Corrective measures may address releases to air, soils, surface water or ground water.

9. "Facility" for purposes of this Part includes any contiguous property and structures, other appurtenances, and improvements on the property, under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

C. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs

1. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any additional SWMUs as discovered under Condition VI.A.4.

2. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any Areas of Concern (AOCs) as discovered under Condition VI.A.4. The notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected,

hazardous constituents released, magnitude of release, etc.). If the Department determines that further investigation of an AOC is required, the permit will be modified in accordance with 40 CFR 270.41 as adopted in 15A NCAC 13A .0013.

3. The Permittee shall prepare and submit to the Department, within one hundred eighty (180) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified under Condition VI.C.1. At a minimum, the SAR shall provide the following information:

   a. Location of unit(s) on a topographic map of appropriate scale such as required under 40 CFR 270.14(b)(19) as adopted in 15A NCAC 13A .0013.

   b. Designation of type and function of unit(s).

   c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

   d. Dates that the unit(s) was operated.

   e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on 40 CFR 261 as adopted in 15A NCAC 13A .0006, Appendix VIII constituents contained in the wastes.

   f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include ground-water data, soil analyses, air, and/or surface water data).

4. Based on the results for the SAR, the Department shall determine the need for further investigations at the SWMUs covered in the SAR. If the Department determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition VI.E.1.b.

D. <u>NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT PREVIOUSLY IDENTIFIED SWMUs and AOCs</u>

1. The Permittee shall notify the Department in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of ground-water monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Condition VI.A.2. or SWMUs or AOCs identified in Condition VI.A.4. for which further investigation under Condition VI.C.4. was not required.

2. If the Department determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition VI.E.1.b.

E. RCRA FACILITY INVESTIGATION (RFI)

1. RFI Workplan(s)

a. Pursuant to Administrative Order On Consent, U.S. Docket No.: 89-13-R the Permittee has prepared and submitted a RCRA Facility Investigation (RFI) Workplan for those units identified in Condition VI.A.1. This workplan has been approved. Copies of the Administrative Order and approval letter are included in Attachment 4 and 5 respectively of this permit.

b. The Permittee shall prepare and submit to the Department, within one hundred eighty (180) calendar days of notification by the Department, an RFI Workplan for those units identified under Condition VI.C.4., or Condition VI.D.2. This RFI Workplan(s) shall be developed to meet the requirements of Condition VI.E.1.c.

c. The RFI Workplan(s) shall meet the requirements of Appendix EE at a minimum. The Workplan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of releases and the potential pathways of contaminant releases to the air, land, surface water, and ground water. The Permittee must provide sufficient justification and/or documentation that a release is not probable if a unit or a media/pathway associated with a unit (ground water, surface water, soil, subsurface gas, or air) is not included in the RFI Workplan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Department. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix EE. Such omissions or deviations are subject to the approval of the Department. The RFI Workplan may be phased to allow for subsequent investigatory activity to be contingent upon the initial phase finding. If the scope of the Workplan(s) is designed to be an initial phase, the initial phase must summarize all potential final phase activities needed to meet the requirements of this condition. In addition, the scope of the RFI Workplan(s) shall include all investigations necessary to ensure compliance with 40 CFR 264.101(c) as adopted in 15A NCAC 13A .0009.

d. The RFI Workplan(s) must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the RFI Workplan schedule in the letter approving the RFI Workplan(s). If the Department disapproves the RFI Workplan(s), the Department shall either (1) notify the Permittee in writing of the RFI Workplan's deficiencies and specify a due date for submission of a revised RFI Workplan, or (2) revise the RFI Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Workplan.

2. RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Workplan(s) and Appendix EE.

3. RFI Reports

a. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the Department with monthly RFI Progress Reports (30 day intervals) beginning thirty (30) calendar days from the start date specified by the Department in the RFI Workplan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the RFI completed;

ii. Summaries of finding;

iii. Summaries of all deviations from the approved RFI Workplan during the reporting period;

iv. Summaries of all problems or potential problems encountered during the reporting period;

v. Projected work for the next reporting period; and

vi. Copies of daily reports, inspection reports, laboratory/ monitoring data, etc.

b. The Permittee shall prepare and submit to the Department Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the Workplan(s) submitted under Condition VI.E.1. The Draft RFI Report(s) shall be submitted to the Department for review in accordance with the schedule in the approved RFI Workplan(s). The Final RFI Report(s) shall be submitted to the Department within forty-five (45) calendar days of receipt of the Department's comments on the Draft RFI Report. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, and a description of actual or potential receptors. The Report(s) shall also describe the extent of contamination (qualitative/ quantitative) in relation to background levels indicative of the area. If the Draft RFI Report is a summary of the initial phase investigatory work, the report shall include a workplan for the final phase investigatory actions required based on the initial findings. Approval of the final phase workplan shall be carried out in accordance with Condition VI.E.1.d. The objective of this task

shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.

c. The Department will review the Final RFI Report(s) and notify the Permittee of the need for further investigative action and/or the need for a Corrective Measures Study to meet the requirements of VI.G., Appendix HH and 40 CFR 264.101 as adopted in 15A NCAC 13A .0009. The Department will notify the Permittee of any "no further action" decision. Any further investigative action required by the Department shall be prepared and submitted in accordance with a schedule specified by the Department and approved in accordance with Condition VI.E.1.d.

F. INTERIM MEASURES (IM)

1. IM Workplan

a. Upon notification by the Department, the Permittee shall prepare and submit an Interim Measures (IM) Workplan for any SWMU or AOC which the Department determines poses a current or potential threat to human health or the environment. The IM Workplan shall be submitted within one hundred eighty (180) calendar days of such notification and shall include the elements listed in VI.F.1.b. Such interim measures may be conducted concurrently with investigations required under the terms of this permit. The Permittee may initiate interim measures by submitting an IM Workplan for approving implementation with reporting in accordance with the requirements under Condition VI.F.1.b.

b. The IM Workplan shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and to be consistent with and integrated into any long-term solution at the facility. The IM Workplan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

c. The IM Workplan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the IM Workplan schedule in the letter approving the IM Workplan. If the Department disapproves the IM Workplan, the Department shall either (1) notify the Permittee in writing of the IM Workplan's deficiencies and specify a due date for submission of a revised IM Workplan, or (2) revise the IM Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Workplan.

d. Pursuant to Administrative Order On Consent, U.S. Docket No.: 89-13-R (Attachment 4), the Permittee has prepared and submitted an Interim Measure (IM) Workplan as specified in Attachment A of the Administrative Order. This plan has been approved. A copy of the approval letter is included in Attachment 5 of this Permit.

2. IM Implementation

a. The Permittee shall implement the interim measures in accordance with the approved IM Workplan.

b. The Permittee shall give notice to the Department as soon as possible of any planned changes, reductions, or additions to the IM Workplan.

c. Final approval of corrective action required under 40 CFR 264.101 as adopted in 15A NCAC 13A .0009 which is achieved through interim measures shall be in accordance with 40 CFR 274.41 as adopted in 15A NCAC 13A .0013 and Condition VI.H. as a permit modification.

3. IM Reports

a. If the time required for completion of interim measures is greater than one (1) year, the Permittee shall provide the Department with monthly progress reports beginning thirty (30) calendar days from the start date specified by the Department in the IM Workplan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the interim measures completed;

ii. Summaries of all deviations from the IM Workplan during the reporting period;

iii. Summaries of all problems or potential problems encountered during the reporting period;

iv. Projected work for the next reporting period; and

v. Copies of laboratory/monitoring data.

b. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of completion of interim measures conducted under Condition VI.F., an IM Report. The IM Report shall contain the following information at a minimum:

i. A description of interim measures implemented:

ii. Summaries of results;

iii. Summaries of all problems encountered;

iv. Summaries of accomplishments and/or effectiveness of interim measures; and

v. Copies of all relevant laboratory/monitoring data, etc. in accordance with Condition I.D.10.

G. CORRECTIVE MEASURES STUDY

1. Corrective Measures Study (CMS) Plan

a. The Permittee shall prepare and submit a CMS Plan for those units requiring a CMS within one hundred eighty (180) calendar days of notification by the Department that a CMS is required. This CMS Plan shall be developed to meet the requirements of Condition VI.G.1.b. The Permittee shall not be required to submit a CMS Plan for units addressed under Administractive Order of Consent, U.S. Docket No.: 89-13-R.

b. The CMS Plan shall meet the requirements of Appendix HH. The CMS Plan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient justification and/or documentation for any unit identified in accordance with Condition VI.G.1.a. which is deleted from the CMS Plan. Such deletion of a unit is subject to the approval of the Department. The CMS shall be conducted in accordance with the approved CMS Plan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix HH. Such omissions or deviations are subject to the approval of the Department. The scope of the CMS Plan shall include all investigations necessary to ensure compliance with 3005(c)(3), 40 CFR 264.101 as adopted in 15A NCAC 13A .0009, and 270.32 as adopted in 15A NCAC 13A .0013. The Permittee shall implement corrective actions beyond the facility boundary, where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Department that, despite the Permittee's best efforts, as determined by the Department, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis.

c. The Department shall either approve or disapprove, in writing, the CMS plan. If the Department disapproves the CMS Plan, the Department shall either (1) notify the Permittee in writing of the CMS Plan's deficiencies and specify a due date for submittal of a revised CMS Plan, or (2) revise the CMS Plan and notify the Permittee of the revisions. This modified CMS Plan becomes the approved CMS Plan.

2. Corrective Measures Study Implementation

The Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Plan, no later than fifteen (15) calendar days after the Permittee has received written approval from the Department for the CMS Plan. The CMS shall be conducted in accordance with the approved CMS Plan approved in accordance with Condition VI.G.1.c.

3. CMS Report

a. The Permittee shall prepare and submit to the Department a draft and final CMS Report for the study conducted pursuant to the approved CMS Plan. The draft CMS Report shall be submitted to the Department in accordance with the proposed schedule submitted concurrently with the RFI Final Report or within one hundred eighty (180) calendar days from the Department's approval of the CMS Plan. The final CMS Report shall be submitted to the Department within one hundred eighty (180) calendar days of receipt of the Department's comments on the draft CMS Report. The CMS Report shall summarize any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative and recommend the preferred alternative. The CMS Report shall present all information gathered under the approved CMS Plan. The CMS Final Report must contain adequate information to support the Department's decision on the recommended remedy, described under Permit Condition VI.H.

b. If the Department determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition VI.G.3.a., the Department may disapprove the CMS Final Report. If the Department disapproves the CMS Final Report, the Department shall notify the Permittee in writing of deficiencies in the CMS Final Report and specify a due date for submittal of a revised CMS Final Report. The Department will notify the Permittee of any no further action decision.

c. As specified under Permit Condition VI.G.3.a., based on preliminary results and the CMS Final Report, the Department may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

H. REMEDY APPROVAL AND PERMIT MODIFICATION

1. A remedy shall be selected by the Department from the remedial alternatives evaluated in the CMS. It will be based at a minimum on protection of human health and the environment, as per specific site conditions, existing regulations, and guidance.

2. Pursuant to 40 CFR 270.41 as adopted in 15A NCAC 13A .0013, a permit modification will be initiated by the Department upon concurrence of a remedy selected in accordance with Condition VI.H.1.

I. MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

1. If at any time the Department determines that modification of the Corrective Action Schedule of Compliance is necessary, the Department may initiate a modification to the Schedule of Compliance, Appendix FF.

2. Modifications that are initiated and finalized by the Department according to proper procedure, as outlined in Appendix II, shall not be subject to administrative appeal.

3. Modifications to the Schedule of Compliance do not constitute a reissuance of the Permit.

4. The Permittee may submit a proposed Corrective Action Management Plan (CAMP) to be used as the schedule of compliance in lieu of Appendix FF. The CAMP shall become the enforceable Corrective Action Schedule of Compliance subject to the terms of this permit upon approval by the Department. The Permittee may initiate a modification to the CAMP at any time subject to approval by the Department and applicable requirements of 40 CFR Part 270.42 as adopted in 15A NCAC 13A .0013. The CAMP shall address the following at a minimum:

   - All documents listed in Appendix FF;

   - All SWMUs and AOCs listed in Appendix DD as requiring corrective action pursuant to this permit; and

   - A prioritization of all SWMUs and AOCs listed in Appendix DD requiring corrective action pursuant to this permit.

   Exception to due dates for submittals required under the CAMP may be provided pursuant to Condition VI.K.2. of this permit shall not be considered a modification to the CAMP or this permit.

J. IMMINENT HAZARDS

1. The Permittee shall report to the Department any imminent or existing hazard to public health or the environment from any release of hazardous waste or hazardous constituents. Such information shall be reported orally within 24 hours from such time the Permittee becomes aware of the circumstances. This report shall include the information specified under Condition I.D.15.

2. A written report shall also be provided to the Department within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Condition I.D.15. and; a description of the release and its cause; the period of the release; whether the release has been stopped; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the release.

K. PLAN AND REPORT REQUIREMENTS

1. All plans and schedules shall be subject to approval by the Department prior to implementation. The Permittee shall revise all submittals and schedules as specified by the Department. Upon approval the Permittee shall implement all plans and schedules as written.

2. The results of all plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Department based on the Permittee's demonstration that sufficient justification for the extension exists.

3. If the Permittee at any time determines that the SAR information required under Condition VI.C., or RFI Workplan(s) required under Condition VI.E., no longer satisfy the requirements of 40 CFR 264.101 as adopted in 15A NCAC 13A .0009 or this permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended RFI Workplan(s) to the Department within ninety (90) calendar days of such determination.

4. All reports shall be signed and certified in accordance with 40 CFR 270.11 as adopted in 15A NCAC 13A .0013.

5. Two (2) copies of all reports and plans shall be provided by the Permittee to the Department at the following address:

   Mr. Jerome H. Rhodes, Chief
   Hazardous Waste Section
   Solid Waste Management Division
   Post Office Box 27687
   Raleigh, NC 27611-7687

PART VII - WASTE MINIMIZATION

A. GENERAL REQUIREMENTS

Pursuant to 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0009, and Section 3005(h) of RCRA, 42 U.S.C. 6925(h), the Permittee must certify, no less often than annually that:

1. The Permittee has a program in place to reduce the volume and toxicity of hazardous waste to the degree determined by the Permittee to be economically practicable; and

2. The proposed method of treatment, storage or disposal is the most practicable method available to the Permittee which minimizes the present and future threat to human health and the environment.

B. WASTE MINIMIZATION RECORD KEEPING

The Permittee shall maintain copies of certification in the facility operating record as required by 40 CFR 264.73(a) and (b)(9) and as adopted in 15A NCAC 13A .0009.

C. WASTE MINIMIZATION PROGRAM OBJECTIVES

The Waste Minimization program required under VII.A. above should address the objectives listed in Appendix JJ.

PART VIII - LAND DISPOSAL RESTRICTIONS

A. GENERAL RESTRICTIONS

1. 40 CFR Part 268 as adopted in 15A NCAC 13A .0012 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of 40 CFR 268 as adopted in 15A NCAC 13A .0012. Where the Permittee has applied for an extension, waiver or variance under 40 CFR 268 as adopted in 15A NCAC 13A .0012 the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such application.

B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

1. A restricted waste identified in 40 CFR Part 268 Subpart C as adopted in 15A NCAC 13A .0012 may not be placed in a land disposal unit without further treatment unless the requirements of 40 CFR Part 268 Subparts C and/or D as adopted in 15A NCAC 13A .0012 are met.

2. The storage of hazardous wastes restricted from land disposal under 40 CFR Part 268 as adopted in 15A NCAC 13A .0012 is prohibited unless the requirements of 40 CFR 268 Subpart E as adopted in 15A NCAC 13A .0012 are met.

C. DEFINITIONS

1. For the purposes of 40 CFR Part 268 as adopted in 15A NCAC 13A .0012, "Land Disposal" means placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

PART IX - ORGANIC AIR EMISSIONS REQUIREMENTS FOR PROCESS VENTS

GENERAL RESTRICTIONS

The Permittee has no units at the time of permit issuance to which the Organic Air Emissions Requirements of 40 CFR 264, Subpart AA (for process vents) as adopted in 15A NCAC 13A .0009, can be imposed, and is not required to submit informational requirements of 270.24. If the Permittee should change or modify any unit which renders the unit's waste stream defined under the specific waste stream definition of this regulation or if there is a change in the waste stream which renders the unit subject to this regulation, the Permittee is required to notify the Department, comply with all 40 CFR, Subpart AA regulations and required to submit all 40 CFR 270.25 as adopted in 15A NCAC 13A .0013 informational requirements within forty-five (45) calendar days of the waste stream change.

PART X - ORGANIC AIR EMISSIONS REQUIREMENTS FOR EQUIPMENT

GENERAL RESTRICTIONS

The Permittee has no units at the time of permit issuance to which the Organic Air Emissions Requirements of 40 CFR 264, Subpart BB (for equipment) as adopted in 15A NCAC 13A .0009 can be imposed, and is not required to submit informational requirements of 270.25. If the Permittee should change or modify any unit which renders the unit's waste stream defined under the specific waste stream definition of this regulation or if there is a waste stream change which renders the unit subject to this regulation, the Permittee is required to notify the Department, comply with all 40 CFR, Subpart BB regulations and required to submit all 40 CFR 270.25 as adopted in 15A NCAC 13A .0013 informational requirements within forty-five (45) calendar days of the waste stream change.

APPENDIX AA

GROUND-WATER SAMPLING AND ANALYSIS CORRECTIVE ACTION MONITORING

APPENDIX AA

GROUND-WATER SAMPLING AND ANALYSIS CORRECTIVE ACTION MONITORING

1. QUARTERLY SAMPLING REQUIREMENTS

Quarterly sampling shall begin no later than ninety days following the effective date of the permit.

PARAMETER	METHOD*
Arsenic	7060
Bis (2-Ethylhexyl) Phthalate	8270
Chloroethane	8240
1,1-Dichloroethane	8240
1,1-Dichloroethylene	8240
2,4-Dimethylphenol	8270
Dichlorodifluoromethane	8240
Methylene Chloride	8240
2-Methylphenol	8270
3-Methylphenol	8270
4-Methylphenol	8270
Naphthalene	8270
Phenol	8270
Tetrachloroethylene	8240
1,1,1-Trichloroethane	8240
Trichloroethene	8240
Vinyl Chloride	8240
pH	Field Measurement
Conductivity	Field Measurement
Temperature	Field Measurement
Water level	Field Measurement

As a part of the remedial action system for RFI Unit 10, Marine Corps Air Station must propose effectiveness ground water monitoring wells to assess the effectiveness of the remedial action system for the waste sludge pits. These effectiveness wells shall be sampled and analyzed for the parameters listed above.

2. ANNUAL SAMPLING REQUIREMENTS

Annual Appendix IX sampling shall begin no later than one (1) year following the effective date of this permit.

PARAMETER	METHOD*
pH	Field Measurements
Temperature	Field Measurements
Water level	Field Measurements
Conductivity	Field Measurements

As a part of the remedial action system for RFI Unit 10, Marine Corps Air Station must propose effectiveness ground water monitoring wells to assess the effectiveness of the remedial action system for the waste sludge pits. These effectiveness wells shall be sampled and analyzed for the parameters listed on page AA-2.

Appendix IX Analysis: Use method specified in 40 CFR 264, Appendix IX, codified 15A NCAC 13A .0009.

Wells 10EGW05, 10EGW06, 10EGW07, 10GW18, 10GW42, and the Point of Compliance well to be installed at 10GW42 to form a well nest shall be sampled and analyzed for Appendix IX parameters annually.

Note: All methods without prefix are from SW 846 Test Methods for Evaluating Solid Waste, 3rd Edition, available from the Government Printing Office, Washington, DC, as publication number 055-002-81001-2.

Note: All standard methods are from Standard Methods for the Examination of Waste and Wastewater, 15th Edition, prepared and published jointly by the American Public Health Association, American Water Works Association, Water Pollution Control Federation.

* Listed method should be used or equivalent.

APPENDIX BB

PERMANENT MONITORING WELLS

APPENDIX BB

PERMANENT MONITORING WELLS

1. The Permittee shall install one (1) point of compliance ground water monitoring well at 10GW42, to form a well nest, at the location specified in Figure BB-1. The well shall be screened just above the confining unit. The ground water monitoring well shall be constructed utilizing stainless steel for the casing and five (5) foot screen and shall be constructed in the manner outlined in the provided Monitoring Well Schematic (Figure BB-2). The appropriate well construction data shall be provided on a well schematic and a well completion record for each ground water monitoring well constructed.

   The Permittee shall install the new point of compliance well within one hundred eighty (180) days after the effective date of the permit.

APPENDIX CC

CORRECTIVE ACTION PROGRAM DESIGN OF REMEDIAL ACTION SYSTEM

APPENDIX CC

CORRECTIVE ACTION PROGRAM DESIGN OF REMEDIAL ACTION SYSTEM

The Permittee shall submit corrective action construction design plans and data, blueprints and a construction schedule for the remedial action system including recovery wells, pumps, piping, tanks, stripping towers and all associated equipment within ninety (90) days after the approval of the remedial action system for RFI Unit 10. Construction shall be complete within 180 days of design approval by all applicable parties including the North Carolina Hazardous Waste Section and the North Carolina Division of Environmental Management. The remedial action system design plans shall also include the following items:

Locations of the extraction and designated observation wells;

Specifications (pumping rates, diameter, screened intervals, etc.) of the extraction wells;

Projected horizontal and vertical influence of the ground-water extraction system, and all calculations used to make these projections.

INSPECTIONS

The Permittee shall submit a general inspection schedule as required by 264.15(b) with the remedial action system design plans within ninety (90) days after the approval of the remedial action system for RFI unit 10.

GENERAL INSPECTION REQUIREMENTS

A description of the inspection schedule for the following equipment must be provided.

1. Monitoring equipment
2. Emergency and safety equipment
3. Operating and structural equipment
4. Communication or alarm systems and decontamination equipment

The schedule must identify the types of problems to look for during inspections (e.g., leaks, deterioration, missing items or materials, inoperative equipment, etc.).

FREQUENCY OF INSPECTIONS

A description of the frequency of inspections must be provided for items on the schedule. The following items shall be inspected weekly: emergency feed cut-off valves, system alarms, tank construction materials, area surrounding tank, visual inspections for erosion and corrosion of tank and tank seams.

The remedial action system shall be inspected daily for: leaks, spills, proper operation and structural integrity.

REMEDIAL ACTION SYSTEM MAINTENANCE

The Permittee shall submit a maintenance schedule for the remedial action system within thirty (30) days of remedial action system design final approval. Procedures and frequency of maintenance shall be included.

REPORTING REQUIREMENTS

The following outlines the items required under Condition V.I. during the start-up phase of the remedial action system. Upon initiation of the corrective action program, and one (1) month thereafter, the Permittee shall provide ground-water level data from the designated observation wells as required for a standard pump test. This data, along with the pumping rates,shall be used to demonstrate the effectiveness of the ground-water extraction system during the start-up phase. Also include on/off frequencies for cyclic pumping and influences that may result from pumping. This data shall be included in the operating record and the semi-annual report on the effectiveness of the corrective action system.

PERSONNEL TRAINING

The Permittee shall conduct introductory and continuing personnel training programs for each employee involved with ground-water sampling or the remedial action equipment. The training shall include instruction for emergency response, contingency plan implementation and explicit sampling, operation and maintenance procedures. The Permittee shall maintain training documents and records. An outline of the training programs shall be submitted to this office within thirty (30) days of final remedial action system design approval.

CONTINGENCY PLAN FOR REMEDIAL ACTION SYSTEM

The Permittee shall have a contingency plan for the remedial action system for response to spills, bursting or clogging of pipes, failure of equipment, or any other unplanned sudden or non-sudden release of hazardous waste constituents to air, soil or surface water at the facility. A contingency plan shall be submitted to this office within thirty (30) days of final remedial action system design approval.

ABANDONMENT

The Permittee shall submit an abandonment plan for the remedial action system within thirty (30) days of final remedial action system design approval. The Permittee shall at a minimum abandon the remedial action system in a manner that:

(a) Minimizes the need for further maintenance, and
(b) Minimizes or eliminates, to the extent necessary to prevent threats to human health or the environment, post-closure escape of hazardous waste, and hazardous constituents.

APPENDIX DD

SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN SUMMARY

Solid waste management unit and area of concern numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report. The designation used in the Administrative Order is also listed for cross referencing.

List of Solid Waste Management Units and Areas of Concern requiring an RFI:

SWMU/AOC No. RFA	ORDER	Description
F-13	a.	Crash Crew Burn Pit
F-14	b.	Crash Crew Burn Pit Oil/Water Separator
F-22	c.	VMGR 252 Accumulation Area
F-38	d.	Crash Crew Accumulation Area
F-42	e.	MAG 14 Accumulation Area #2
S-6	g.	H & HS 28 Former Accumulation Area (Formerly 2nd LADD Accumulation Area)
S-11	i.	MWCS 28 Accumulation Area
S-A(AOC)	j.	Fuel Line Leak Site
C-8	o.	Construction Landfill
C-11	q.	Current Sludge Application Area
C-13	s.	Drainage System
C-15	t.	Oil/Water Separators
C-17	u.	Leach Fields
C-A(AOC)	v.	PCB Transformer Spill
I-1	w.	Borrow Pit/Landfill
I-2	x.	Borrow Pit/Dump Site
I-3	y.	EOD Pit/Landfill
I-5	z.	Storage Tank (100,000 gallons for waste POL)
I-6	aa.	Fly Ash Ponds
I-7	bb.	Old Incinerator and Adjacent Area
I-10a	cc.	Old Sanitary Landfill
I-12	dd.	Crash Crew Training Area
I-15	ee.	Area and Ditch Behind Naval Aviation Depot (NADEP)
I-16	ff.	Landfill at Sandy Branch
I-17	gg.	Defense Property Disposal Office Storage Area
I-19	hh.	Borrow Pit/Landfill (North of Runway 32)
I-21	ii.	Borrow Pit/Landfill (South of Runway 32)

List of Solid Waste Management Units or Areas of Concern that require no further action at this time.

SWMU/AOC No. RFA	Description
F-1	HMS 14 Wash Rack
F-2	HMS 14 Underground Storage Tank
F-3	Hanger 250 Sump
F-4	VMGR 252 Aircraft Wash Rack
F-5	VMAQ 2 Aircraft Wash Rack
F-6	VMA 332 Aircraft Wash Rack
F-7	HMS 32 Wash Rack
F-8	MAG 32 Underground Waste Oil Storage Tank
F-9	MAG 32 Underground Waste Hydraulic Fluid Storage Tank
F-10	MAG 32 Paint Booth
F-11	VMA 542 Waste Oil Above-ground Storage Tank
F-12	MAG 32 Aircraft Wash Rack and Sump
F-15	Crash Crew Fuel Tanker
F-16	HMS 14 Accumulation Area
F-17	HMS 14 Spent Battery Storage Area
F-18	HMS 14 GSE #1 Accumulation Area
F-19	HMS 14 GSE #2 Accumulation Area
F-20	VMGR 253 #1 Accumulation Area
F-21	VMGR 253 #2 Accumulation Area
F-23	VMAQ 2 Accumulation Area
F-24	HMS 14 (Building 130) Accumulation Area
F-25	VMA 332 Accumulation Area
F-26	VMA 533 Accumulation Area
F-27	SOES Accumulation Area
F-28	VMAT 203 Accumulation Area
F-29	HMS 32 #1 Accumulation Area
F-30	HMS 32 #2 Accumulation Area
F-31	HMS 32 GSE #1 Accumulation Area
F-32	HMS 32 GSE #2 Accumulation Area
F-33	VMA 223 Accumulation Area
F-34	VMA 542 #1 Accumulation Area
F-35	VMA 542 #2 Accumulation Area
F-36	VMA 231 Accumulation Area
F-37	VMA 331 Accumulation Area
F-39	HMS 32 Accumulation Area
F-40	Crash Crew Burn Pit Accumulation Area
F-41	MAG 32 Accumulation Area #1
N-1	Paint Shop Water Curtain
N-2	Plating Shop Cleaning Vats
N-3	Metal Plating Shop Degreaser
N-4	Metal Cleaning Shop Vats

* The designation used in the Administrative Order is also listed for cross referencing:

N-5		Cleaning Shop Vats
N-6		Chemical Stripline Cleaning Vats
N-7		Photo Lab and Cleaning Shop Holding Tank
N-8		Silver Recovery Tank in Photo Shop
N-9		Roto Head Repair Shop Parts Cleaner
N-10		Down Draft Paint Sump
N-11		Zinc Rinse Tank Sump
N-12		Plating System Tank
N-13		Anodizing Solution Tank
N-14		Typical Container Accumulation Area
N-15		Electroplating Shop Sump
N-16		Paint Shop Water Curtain
N-17		Cleaning Vats
N-18		Aircraft Paint Stripping Shop Sump
N-19		Central Transfer Area
N-20		Down Draft Aircraft Paint Booth
N-21		Plastic Media Blasting Cyclone
N-22	*f.	NARF Former Drum Storage Area
S-1		Boat Dock Waste Oil Above-ground Storage Tank
S-2		Navy Boat Dock Accumulation Area
S-3		Generator Shop Accumulation Area
S-4		MWSS 271 Accumulation Area
S-5		MWSS 274 Accumulation Area
S-7		MACS 6 Accumulation Area
S-8		MACS 6 Wash Rack
S-9		MASS 1 Accumulation Area
S-10	*h.	MASS 1 Wash Rack and Oil/Water Separator
S-12		Pesticide Mixing Area
C-3		PCB-Contaminated Soil Pile
C-4	*m.	Industrial Wastewater Treatment Plant
C-5	*n.	Sewage Treatment Plant
C-6		Fly Ash Holding Tank
C-7		Coal Yard Catchment Basin
C-9		Asbestos Disposal Area
C-10	*p.	Former Sludge Application Area
C-12	*r.	Polishing Ponds #1 and #2
C-14		Underground Storage Tanks
C-16		PCB Transformer Storage Area
I-4		Borrow Pit/Landfill (North of Runway 14)
I-8		Tank Farm B
I-9		Tank Farm D
I-10c	*cc.	Old Sanitary Landfill Sludge Application Site
I-11		MAG 14 Supply Site
I-13		Tank Farm A
I-14		Motor Transportation
I-18		Facilities Maintenance Compound
I-20		Training Area Four

List of Solid Waste Management Units regulated by the State's portion of the RCRA permit:

SWMU/AOC No. RFA	ORDER	Description
C-1	k.	DRMO Hazardous Waste Storage Facility
C-2	l.	Facilities Maintenance Hazardous Waste Storage Facility
I-10b	cc.	Sludge Pits

List of Solid Waste Management Units and Areas of Concern Requiring Confirmatory Sampling

SWMU No.	Description

There were no SWMUs in this category.

APPENDIX EE

RCRA FACILITY INVESTIGATION (RFI) WORK PLAN OUTLINE

APPENDIX EE

RCRA FACILITY INVESTIGATION (RFI) WORK PLAN OUTLINE

I. RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare a RCRA Facility Investigation (RFI) Workplan that meets the requirements of Part II of this document and the RFI Guidance, EPA-530/SW-89-031. This Workplan shall also include the development of the following plans, which shall be prepared concurrently:

A. Project Management Plan

Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Sampling and Analysis Plan(s)

The Permittee shall prepare a plan to document all monitoring procedures: field sampling, sampling procedures and sample analysis performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented. The Sampling Strategy and Procedures shall be in accordance with Characterization of Hazardous Waste Sites A Methods Manual: Volume II., Available Sampling Methods, EPA-600/4-84-076, or EPA Region IV Engineering Support Branch's Standard Operating Procedure and Quality Assurance Manual (SOP). Any deviations from these references must be requested by the applicant and approved by EPA. The Sampling and Analysis Plan must specifically discuss the following unless the EPA-600/4-84-076 or SOP procedures are specifically referenced.

1. Sampling Strategy

a. Selecting appropriate sampling locations, depths, etc.;

b. Obtaining all necessary ancillary data;

c. Determining conditions under which sampling should be conducted;

d. Determining which media are to be sampled (e.g., ground water, air, soil, sediment, subsurface gas);

e. Determining which parameters are to be measured and where;

f. Selecting the frequency of sampling and length of sampling period;

g. Selecting the types of samples (e.g., composites vs. grabs) and number of samples to be collected.

2. Sampling Procedures

a. Documenting field sampling operations and procedures, including;

i. Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and absorbing reagents);

ii. Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

iii. Documentation of specific sample preservation method;

iv. Calibration of field instruments;

v. Submission of field-biased blanks, where appropriate;

vi. Potential interferences present at the facility;

vii. Construction materials and techniques, associated with monitoring wells and piezometers;

iii. Field equipment listing and sampling containers;

ix. Sampling order; and

x. Decontamination procedures.

b. Selecting appropriate sample containers;

c. Sampling preservation; and

d. Chain-of-custody, including:

i. Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and

ii. Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Sample Analysis

Sample analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste-Physical/Chemical Methods" (third edition). The sample analysis section of the Sampling and Analysis Plan shall specify the following:

a. Chain-of-custody procedures, including:

   i. Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipments, and verify the data entered onto the sample custody records;

   ii. Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

   iii. Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.

b. Sample storage;

c. Sample preparation methods;

d. Analytical Procedures, including:

   i. Scope and application of the procedure;

   ii. Sample matrix;

   iii. Potential interferences;

   iv. Precision and accuracy of the methodology; and

   v. Method detection limits.

e. Calibration procedures and frequency;

f. Data reduction, validation and reporting;

g. Internal quality control checks, laboratory performance and systems audits and frequency, including:

   i. Method blank(s);

   ii. Laboratory control samples(s);

   iii. Calibration check samples(s);

   iv. Replicate samples(s);

v. Matrix-spiked sample(s);

vi. Control charts;

vii. Surrogate samples;

viii. Zero and span gases; and

ix. Reagent quality control checks.

h. Preventative maintenance procedures and schedules;

i. Corrective action (for laboratory problems); and

j. Turnaround time.

C. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

a. Unique sample or field measurement code;b.Sampling or field measurement location and sample or measurement type;

b. Sampling or field measurement raw data;

c. Laboratory analysis ID number;

d. Property or component measures; and

e. Result of analysis (e.g., concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

a. Unsorted (raw) data;

b. Results for each medium, or for each constituent monitored;

c. Data reduction for statistical analysis, as appropriate;

d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

e. Summary data.

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transits, three dimensional graphs, etc.):

a. Display sampling location and sampling grid;

b. Indicate boundaries of sampling area, and area where more data are required;

c. Display geographical extent of contamination;

d. Illustrate changes in concentration in relation to distances from the source, time, depth or other parameters; and

e. Indicate features affecting inter-media transport and show potential receptors.

II. RCRA FACILITY INVESTIGATION (RFI) REQUIREMENTS

RCRA Facility Investigation:

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of release of hazardous constituents (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical content and quality to support the development and evaluation of the corrective action plan if necessary. The information contained in a RCRA Part B permit application and/or RCRA Section 3019 Exposure Information Report may be referenced as appropriate.

All sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and/or verify Part B information on the environmental setting at the facility. The

Permittee shall characterize the following as they relate to identified sources, pathways and areas of releases of hazardous constituents from Solid Waste Management Units.

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground-water flow beneath the facility, including:

   i. Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;

   ii. Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);

   iii. Depositional history;

   iv. Regional and facility specific ground-water flow patterns; and

   v. Identification and characterization of areas and amounts of recharge and discharge.

b. An analysis of any topographic features that might influence the ground-water flow system.

c. Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:

   i. Hydraulic conductivity and porosity (total and effective);

   ii. Lithology, grain size, sorting, degree of cementation;

   iii. An interpretation of hydraulic interconnections between saturated zones; and

   iv. The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content, etc.).

d. Based on data obtained from ground-water monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

   i. Water-level contour and/or potentiometric maps;

   ii. Hydrologic cross-sections showing vertical gradients;

   iii. The flow system, including the vertical and horizontal components of flow; and

   iv. Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

e. A description of man-made influences that may affect the hydrology of the site, identifying:

   i. Local water-supply and production wells with an approximate schedule of pumping; and

   ii. Man-made hydraulic structures (pipelines, trench drains, ditches, etc.)

2. <u>Soils</u>

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of contaminant release(s). Such characterization may include, but not be limited to, the following types of information as appropriate:

a. Surface soil distribution;
b. Soil profile, including ASTM classification of soil;
c. Transepts of soil stratigraphy;
d. Hydraulic conductivity (saturated and unsaturated);
e. Relative permeability;
f. Bulk density;
g. Porosity;
h. Soil sorption capacity;
i. Cation exchange capacity (CEC);
j. Soil organic content;
k. Soil pH;
l. Particle size distribution;
m. Depth of water table;
n. Moisture content;
o. Effect of stratification on unsaturated flow;
p. Infiltration;
q. Evapotranspiration;
r. Storage capacity;
s. Vertical flow rate; and
t. Mineral content.

3. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterizations may include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface water bodies including:

   i. For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;

   ii. For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;

   iii. For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100 year event), discharge point(s), and general contents.

   iv. Drainage patterns; and

   v. Evapotranspiration.

b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c. Description of sediment characteristics including:

   i. Deposition area;

   ii. Thickness profile; and

   iii. Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

4. Air

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

a. A description of the following parameter:

   i. Annual and monthly rainfall averages;

ii. Monthly temperature averages and extremes;

iii. Wind speed and direction;

iv. Relative humidity/dew point;

v. Atmospheric pressure;

vi. Evaporation data;

vii. Development of inversions; and

viii. Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence (i.e., Hurricanes).

b. A description of topographic and man-made features which affect air flow and emission patterns, including:

i. Ridges, hills or mountain area;

ii. Canyons or valleys;

iii. Surface water bodies (e.g., rivers, lakes, bays, etc.); and

iv. Buildings.

B. Source Characterization

For those sources from which releases of hazardous constituents have been detected the Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety risks, including: type; quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineering barriers). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics

a. Location of unit/disposal area;
b. Type of unit/disposal area;
c. Design features;
d. Operating practices (past and present);
e. Period of operation;
f. Age of unit/disposal area;
g. General physical conditions; and
h. Method used to close the unit/disposal area.

2. Waste Characteristics:

a. Type of wastes placed in the unit;

i. Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);

ii. Quantity; and

iii. Chemical composition.

b. Physical and chemical characteristics such as;

i. Physical form (solid, liquid, gas);

ii. Physical description (e.g., powder, oily sludge);

iii. Temperature;

iv. pH;

v. General chemical class (e.g., acid, base, solvent);

vi. Molecular weight;

vii. Density;

viii. Boiling point;

ix. Viscosity;

x. Solubility in water;

xi. Cohesiveness of the waste; and

xii. Vapor pressure.

c. Migration and dispersal characteristics of the waste such as:

i. Sorption capability;

ii. Biodegradability, bioconcentration, biotransformation;

iii. Photodegradation rates;

iv. Hydrolysis rates; and

v. Chemical transformations.

The Permittee shall document the procedures used in making the above determinations.

C. Characterization of Releases of Hazardous Constituents

The Permittee shall collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination in the vicinity of the facility in accordance with the sampling and analysis plan as required above. These data shall be sufficient to define the extent, origin, direction, and rate of movement of contamination. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Permittee shall address the following types of contamination at the facility:

1. Ground-water Contamination

The Permittee shall conduct a ground-water investigation to characterize any plumes of contamination detected at the facility. This investigation shall at a minimum provide the following information:

a. A description of the horizontal and vertical extent of any plume(s) of hazardous constituents originating from or within the facility;

b. The horizontal and vertical direction of contamination movement;

c. The velocity of contaminant movement;

d. The horizontal and vertical concentration profiles of hazardous constituents in the plume(s);

e. An evaluation of factors influencing the plume movement; and

f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the saturated zone in the vicinity of any contaminant release. The investigation may include the following information:

a. A description of the vertical and horizontal extent of contamination;

b. A description of appropriate contaminant and soil chemical properties within the contaminant source area and plume. This may include contaminant solubility, speciation, absorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contaminant movement; and

e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from releases of hazardous constituents at the facility.

The investigation may include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any plume(s) originating from the facility, and the extent of contamination in underlying sediments;

b. The horizontal and vertical direction of contaminant movement;

c. The contaminant velocity;

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e. An extrapolation of future contaminant movement; and

f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

4. Air Contamination

The Permittee shall conduct in investigation to characterize gaseous releases of hazardous constituents into the atmosphere or any structures or buildings. This investigation may provide the following information:

a. A description of the horizontal and vertical direction and velocity of contaminant movement;

b. The rate and amount of the release; and

c. The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

The Permittee shall document the procedures used in making the above determinations.

D. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples and/or data on observable effects in ecosystems may also be obtained as appropriate. The following characteristics shall be identified:

1. Current local uses and planned future uses of ground water:

   a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and b.Location of ground-water users, to include withdrawal and discharge wells, within one mile of the impacted area.

   The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. Current local uses and planned future uses of surface waters directly impacted by the facility:

   a. Domestic and municipal (e.g., potable and lawn/gardening watering);
   b. Recreational (e.g., swimming, fishing);
   c. Agricultural;
   d. Industrial; and
   e. Environmental (e.g., fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including but not limited to:

   a. Recreation;
   b. Hunting;
   c. Residential;
   d. Commercial; and
   e. Relationship between population locations and prevailing wind direction.

4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A general description of the ecology within the area adjacent to the facility.

6. A general demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.

7. A description of any known or documented endangered or threatened species near the facility.

APPENDIX FF

SCHEDULE OF COMPLIANCE

APPENDIX FF
SCHEDULE OF COMPLIANCE

Schedule of Compliance	Due Date
Notification of Newly Identified SWMUs and AOCs Condition VI.C.1 and Condition VI.C.2.	Within fifteen (15) calendar days of discovery
SWMU Assessment Report Condition VI.C.3.	Within one hundred eighty (180) calendar days of notification
Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs Condition VI.D.1.	Within fifteen (15) calendar days of discovery
RFI Workplan for SWMU(s) and AOC(s) days Identified under Condition VI.C.4., Condition VI.D.2., and Condition VI.E.1.b	Within one hundred eighty (180) calendar days after receipt of notification by the Department which SWMUs or AOCs require an RFI
RFI Progress Reports Condition VI.E.3.a.	Monthly, beginning thirty (30) calendar days from the start date specified by the Department *
Draft RFI Report Condition VI.E.3.b.	In accordance with the schedule in approved RFI Workplan
Final RFI Report Condition VI.E.3.b.	Within forty-five (45) calendar days after receipt of the Department's comments on the Draft RFI Report
Interim Measures Plan Condition VI.F.1.a.	Within one hundred eighty (180) calendar days of notification by the Department
Interim Measures Progress Reports Condition VI.F.3.a.	Monthly, beginning thirty (30) calendar days from date specified by the Department **

In the event of conflicts between the Schedule of Compliance of this permit as stated in Appendix D and scheduled dates of compliance in the Administrative Order on Consent, U.S. Docket No.: 89-13-R, the dates stated in the order will take precedence as long as the order is in effect.

FF-2Schedule of Compliance	Due Date
Interim Measure Report Condition VI.F.3.b.	Within ninety (90) calendar days of completion of interim measures
CMS Plan Condition VI.G.1.a	Within one hundred eighty (180) calendar of notification by the Department that a CMS is needed
Draft CMS Report Condition VI.G.3.a.	Within one hundred eighty (180) calendar days of the Department's approval of CMS Plan
Final CMS Report Condition VI.G.3.a.	Within one hundred eighty (180) calendar days of receipt of Department's comments on draft CMS Report
Imminent Hazard Report Condition VI.J.1. and VI.J.2.	Oral within 24 hours; Written within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances
Waste Minimization Certification Condition VII.A.	Annually from effective date of permit
Organic Air Emissions Report Condition IX and Condition X.	Within forty-five (45) calendar days of the waste stream change

The above reports must be signed and certified in accordance with 40 CFR 270.11 as adopted by 15A NCAC 13A .0013.

* This applies to Workplan execution that requires more than one hundred and eighty (180) calendar days.

** This applies to Workplan execution that requires more than one year.

APPENDIX GG

RCRA FACILITY ASSESSMENT (RFA) REPORT

APPENDIX HH

CORRECTIVE MEASURES STUDY (CMS) PLAN OUTLINE

APPENDIX HH

CORRECTIVE MEASURES STUDY (CMS) PLAN OUTLINE

I. Identification and Development of the Corrective Measure Alternatives

A. Description of Current Situation
B. Establishment of Corrective Action Objectives
C. Screening of Corrective Measures Technologies
D. Identification of the Corrective Measure Alternatives

II. Evaluation of the Corrective Measure Alternatives

A. Technical/Environmental/Human Health/Institutional
B. Cost Estimate

III. Justification and Recommendation of the Corrective Measure or Measures

A. Technical
B. Environmental
C. Human Health

IV. Reports

A. Draft
B. Final
C. Public Review and Final Selection of Corrective Measure

I. IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURES ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified potential corrective measure technologies, the Permittee shall identify, screen and develop the alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation (RFI) Report. The Permittee shall provide an update to information presented in the RFI regarding previous response activities and interim measures which have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee shall propose facility-specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RFI, EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning ground-water releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR 264.100 as adopted in 15A NCAC 13A .0009.

C. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and assess the technologies which are applicable at the facility. The Permittee shall screen the corrective measure technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

2. Waste Characteristics

   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

3. Technology Limitations

   During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternatives

The Permittee shall develop the Corrective Measure Alternatives based on the corrective action objectives and analysis of potential corrective measure technologies. The Permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternatives. The alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies.

II. EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the initial screening and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is no limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical:

a. The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

i. Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

ii. Useful life is defined as the length of time the level of desired effectiveness can be maintained.

Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i. Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or

complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii. Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Respondent should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

i. Constructability is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

ii. Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental:

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short- and long-term beneficial and adverse effects of the response alternative; and adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health:

The Permittee shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the concentrations and characteristics of the contaminants on-site, potential exposure routes, and potentially affected population. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, state and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative. If the selected remedy is capping and closure in place, a notation must be made in the land deed.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

1. Capitol costs consist of direct (construction) and indirect (non-construction and overhead) costs.

   a. Direct capital costs include.

      i. Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.

ii. Equipment costs:
Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;

iii. Land and site-development costs: Expenses associated with purchase of land and development of existing property; and

iv. Buildings and services costs: Costs of process and non-process buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:

i. Engineering expenses: Cost of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;

ii. Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;

iii. Start-up and shakedown costs: Costs incurred during corrective measure start-up; and

iv. Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;

f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accident insurance; real estate taxes on purchased land or right-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other costs: Items that do not fit any of the above categories.

III. JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Department will select the corrective measure alternative or alternatives to be implemented based on the results

obtained from work completed under Section II and III. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proved effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure(s) must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure(s) posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

IV. REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results obtained from Sections I through III and recommending a corrective measure alternative. Copies of the preliminary report shall be provided by the Permittee to the Department for review and approval.

A. Draft

The Report shall at a minimum include:

1. A description of the facility;

   a. Site topographic map and preliminary layouts.

2. A summary of the corrective measure(s) and rationale for selection;

   a. Description of the corrective measure(s) and rationale for selection;

   b. Performance expectations;

   c. Preliminary design criteria and rationale;

   d. General operation and maintenance requirements; and

   e. Long-term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;

   a. Field studies (ground water, surface water, soil, air); and

   b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions;

   a. Special technical problems;

   b. Additional engineering data required;

   c. Permits and regulatory requirements;

   d. Access, easements, right-of-way;

   e. Health and safety requirements; and

   f. Community relations activities.

5. Cost Estimates and Schedules;

   a. Capitol cost estimate;

   b. Operation and maintenance cost estimate; and

   c. Project schedule design, construction, and operation).

Copies of the draft shall be provided by the Permittee to the Department.

B. Final

The Permittee shall finalize the Corrective Measure Study Report incorporating comments received from the Department on the Draft Corrective Measure Study Report. The report shall become final upon approval by the Department.

C. Public Review and Final Selection of Corrective Measures

Upon receipt of the Final Corrective Measure Study Report, EPA shall announce its availability to the public for review and comment. At the end of the comment period, the Department shall review the comments and then inform the Permittee of the final decision as to the approved Corrective Measures to be implemented.

APPENDIX II

MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

APPENDIX II

MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

I. If at any time the Department determines that modifications of the Corrective Action Schedule of Compliance is necessary, he or she may initiate a modification to the Schedule of Compliance according to this procedure. If the Department initiates a modification, the Department shall:

A. Notify the Permittee in writing of the proposed modification and the date by which comments on the proposed modification must be received; and

B. Publish a notice of the proposed modification in a locally distributed newspaper, mail a notice to all persons on the facility mailing list maintained according to 40 CFR 124.10(c)(viii) as adopted in 15A NCAC 13A .0005, and place a notice in the facility's information repository (i.e., a central source of all pertinent documents concerning the remedial action, usually maintained at the facility or some other public place, such as a public library, that is accessible to the public) if one is required.

1. If the Department receives no written comment on the proposed modification, the modification shall become effective five (5) calendar days after the close of the comment period.

2. If the Department receives written comment on the proposed modification, the Department shall make a final determination concerning the modification after the end of the comment period.

C. Notify the Permittee in writing of the final decision.

1. If no written comment was received, the Department shall notify individuals on the facility mailing list in writing that the modification has become effective and shall place a copy of the modified Corrective Action Schedule of Compliance in the information repository, if a repository is required for the facility.

2. If written comment was received, the Department shall provide notice of the final modification decision in a locally distributed newspaper and place a copy of the modified Corrective Action Schedule of Compliance in the information repository, if a repository is required for the facility.

II. Modifications that are initiated and finalized by the Department according to this procedure shall not be subject to administrative appeal.

III. Modifications to the Corrective Action Schedule of Compliance do not constitute a reissuance of the Permit.

APPENDIX JJ

WASTE MINIMIZATION OBJECTIVES

APPENDIX JJ

WASTE MINIMIZATION CERTIFICATION OBJECTIVES

The Waste Minimization Program should include the following elements:

1. Top Management Support

   - Dated and signed policy describing management support for waste minimization and for implementation of a waste minimization plan.

   - Description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.

   - Description of how a waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations, and maintenance.

2. Characterization of Waste Generation

   - Identification of types, amounts, and hazardous constituents of waste streams, with the source and date of generation.

3. Periodic Waste Minimization Assessments

   - Identification of all points in a process where materials can be prevented from becoming a waste, or can be recycled.

   - Identification of potential waste reduction and recycling techniques applicable to each waste, with a cost estimate for capital investment and implementation.

   - Description of technically and economically practical waste reduction/recycling options to be implemented, and a planned schedule for implementation.

   - Specific performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the generator.

4. Cost Allocation System

   - Identification of waste management costs for each waste, factoring in liability, transportation, recordkeeping, personnel, pollution control, treatment, disposal, compliance and oversight costs to the extent feasible.

   - Description of how departments are held accountable for the wastes they generate.

- Comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste.

5. Technology Transfer

- Description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

6. Program Evaluation

- Description of types and amounts of hazardous waste reduced or recycled.

- Analysis and quantification of progress made relative to each performance goal established and each reduction technique to be implemented.

- Amendments to waste minimization plan and explanation.

- Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.

- Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

References: "Draft Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program", 54 FR 25056, June 12, 1989.

"Waste Minimization Opportunity Assessment Manual", EPA/625/788/003, July 1988.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

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SEP 30 1992

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commanding General
Marine Corps Air Station Cherry Point
Attention: Mr. R. D. Nelson
Natural Resources and
Environmental Affairs Officer
Building 198
Cherry Point, North Carolina 28533

Re: Decision to Issue HSWA Portion of the RCRA Permit
Marine Corps Air Station
Cherry Point, North Carolina
EPA I.D. Number NC1 170 027 261

Dear Mr. Nelson:

This is notification of the Agency's decision to issue the corrective action portion of the Resource Conservation and Recovery Act (RCRA) Permit. The enclosed permit covers the requirements of the 1984 Hazardous and Solid Waste Amendments (HSWA). This portion, together with the hazardous waste permit issued by the State of North Carolina constitutes the full RCRA permit for Marine Corps Air Station located in Cherry Point, North Carolina.

Comments were received during the public participation period. Attachment A, entitled "Response to Comments for the Draft HSWA Permit," and Attachment B which includes a copy of the submitted comments are enclosed. In accordance with 40 CFR §124.15, the permit will become effective October 30, 1992 unless a review is requested under 40 CFR §124.19. A summary of the procedures to request an administrative review is enclosed.

All applicable RCRA regulations in effect at the time of permit issuance and referenced in the permit shall be complied with throughout the life of the permit, unless there are requests for modifications of the permit in accordance with 40 CFR 270.41 and 270.42.

Printed on Recycled Paper

If there are any questions or concerns regarding this permit or the appeal procedures, please contact Mr. Kelly Ewing of my staff at (404) 347-3433.

Sincerely yours,

Joseph R. Franzmathes
Director
Waste Management Division

Enclosure: Summary of Requirements for Notice of Appeal/ Petition Review; Permit; RCRA Regulations

cc: Mr. Karim Pathan, NC DEHNR

SUMMARY OF REQUIREMENTS FOR NOTICE OF APPEAL / PETITION FOR REVIEW

Any person who files comments on the draft permit, permit modification or participates in the public hearing on the draft permit or permit modification may petition the Environmental Appeals Board to review any condition of the final permit decision. A person who did not file comments or participate in the public hearing on the draft permit or permit modification may not petition for administrative review, except concerning those changes made from the draft to the final permit or permit modification (e.g., new or amended permit conditions that were not included in the draft document).

The petition:

1. Must be submitted within a 30-day period, beginning the day after the Region serves notice of the final permit decision, unless the notice specifies a later date.

2. Must contain a statement of the reasons supporting that review, including a demonstration that any issues raised in the petition were previously raised during the public comment period or public hearing and, when appropriate, a showing that the initial decision contains:

   a. a finding of fact or conclusion of law which is clearly erroneous, or

   b. an exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its descretion, review.

3. Must be sent (an original and one copy) to the Environmental Appeals Board, at the following address:

   U.S. Environmental Protection Agency
   Office of the Administrator
   Environmental Appeals Board (A-101)
   401 M Street, SW
   Room 1145 (West Tower)
   Washington, DC 20460

   A copy of the Petition should also be sent to the Region IV Regional Administrator, at the following address:

   U.S. Environmental Protection Agency
   Region IV
   345 Courtland Street, NE
   Atlanta, GA 30365

ATTACHMENT A

RESPONSE TO COMMENTS FOR THE DRAFT HSWA PERMIT
Marine Corps Air Station
Cherry Point, North Carolina
EPA I.D. Number NC1 170 027 261

Response to Comment #5

RCRA Facility Investigation (RFI) Workplan submittals are required for each field investigation performed at the facility. The HSWA Permit defines the conditions under which an RFI Workplan must be submitted and how to report deviations from an approved RFI Workplan. Appendix B of the HSWA Permit and the RFI Guidance, EPA-530/SW-89-031, clarify the requirements for RFI Workplans. No changes will be made to the Draft Permit as a result of this comment.

Response to Comment #6

Condition II.F.1.a. states "The Permittee shall not be required to submit a CMS Plan for units addressed under Administrative Order On Consent, U.S. Docket No.: 89-13-R." to be consistent with the Administrative Order On Consent and the submission procedure defined therein. However, the Regional Administrator may require a CMS Plan for units that are not addressed under the Administrative Order On Consent, U.S. Docket No.: 89-13-R if it is determined that a Corrective Measures Study is required. No changes will be made to the Draft Permit as a result of this comment.

Response to Comments #7, #8, #9, #10, #11, and #12

As MCAS, Cherry Point, North Carolina stated in comment #7, "The HSWA Permit for MCAS includes specific language concerning requests for extensions to the due dates specified within the permit." The conditions stated in the HSWA Permit and the applicable regulations are sufficient to define the procedures and actions necessary to modify the Schedule of Compliance in Appendix D. Addition of the conditions proposed in comments #8, #9, #10, #11, and #12 would confuse rather than clarify the procedures. No changes will be made to the Draft Permit as a result of these comments.

Response to Comment #13

As accurately stated in Comment #13, "Federal Facilities are required by Section 6001 of RCRA (42 U.S.C 6961) to comply with all Federal and State requirements of RCRA." Exemptions are discussed in Section 6001 of RCRA and need not be stated in this permit. No changes will be made to Draft Permit as a result of this comment.

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The condition requested by this comment would be in direct conflict with several other conditions in the permit that require written approval for workplans and reports. Furthermore, the workplans and reports that will be submitted by the permittee are much too important to receive only "tacit approval." To ensure timely reviews, the permittee should communicate with EPA frequently and use available guidance when preparing workplans and reports. No changes will be made to the Draft Permit as a result of this comment.

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Response to Comments #1, #2, #3, #4, #15, and #16

The North Carolina Department of Environment, Health, and Natural Resources will respond to these comments.

ATTACHMENT B

192

UNITED STATES MARINE CORPS
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA 28533-5001

IN REPLY REFER TO
6280
LN
21 Sep 92

Mr. Jerome H. Rhodes
Chief, Hazardous Waste Section
North Carolina Department of Environment,
Health, and Natural Resources
P.O. Box 27687
Raleigh, North Carolina 27611-7687

RE: Hazardous Waste Management Draft Permit for Marine Corps Air Station, Cherry Point, North Carolina

Dear Mr. Rhodes:

This letter is submitted in order to transmit written comments to the Hazardous Waste Management Draft Permit proposed for Marine Corps Air Station, Cherry Point. Comments to the permit are provided in enclosure (1).

If you have any questions or require additional information, please contact Mahlon Yokley or myself of the Natural Resources and Environmental Affairs Department at (919) 466-4591.

Sincerely,

R. D. NELSON
Natural Resources and
Environmental Affairs Officer
By direction of the
Commanding General

Encl:
(1) Comments to Hazardous Waste Draft Permit

Copy to:
Mr. Kelly Ewing (2 copies - w/encl)
U.S. Environmental Protection Agency
RCRA and Federal Facilities Branch
4-RCRA-WES-2
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Commander, Atlantic Division (2 copies - w/encl)
Naval Facilities Engineering Command
Attn: J. Steinberg (Code 1822)
Norfolk, Virginia 23511-6287

SEP 22 9 26 AM '92

Commandant of the Marine Corps (LFL) (1 copy - w/encl)
Headquarters, U.S. Marine Corps
Attn: John Burleson
2 Navy Annex
Washington, DC 20380-1775

COMMENTS TO HAZARDOUS WASTE DRAFT PERMIT
MARINE CORPS AIR STATION (MCAS), CHERRY POINT

1. Page I-7, paragraph I.4. and page V-2 paragraph E.5. These paragraphs require that the Point of Compliance well to be located at RFI Unit 10 be completed within 60 days of the effective date of the permit. Request that this time period be changed to 180 days to allow a sufficient time period for compliance with federal acquisition regulations and well permit application submittal and approval.

2. Page V-5, paragraph G.4. This paragraph requires that corrective action system design plans be submitted "...within ninety days after approval of the remedial action system..." and that "Construction shall be completed within 180 days of the approval by all applicable parties." Request that this paragraph be changed to allow that these tasks be completed in accordance with an approved schedule submitted by the Air Station as required by the 3008(h) Administrative Order on Consent.

3. Responsible Contact Person. The RCRA Part B Permit Application, Part B, page B-3 designates Steve T. Simmons, Supervisory Environmental Engineer as the "...contact person responsible for the day-to-day HW management program at MCAS Cherry Point...." Request that the contact person be changed to Mahlon K. Yokley, Supervisory Environmental Engineer.

4. Page I-3, paragraph 9, Inspection and Entry. Currently there are no hazardous waste storage areas or accumulation sites located in classified areas. However, the occasion may arise in the future when such a situation does exist. Similarly, in situations of national emergencies or general mobilizations access to the Air Station may be restricted, thereby affecting what may be perceived as "...reasonable times...." In view of these situations, request that the following paragraphs be added to this section:

e. The Department recognizes that entry to areas which are classified or which require security clearances in order to access may be denied or delayed and that access will not be demanded until such time as appropriate clearances are obtained or until access is granted by the Air Station's Security Manager.

f. The Department recognizes that during periods of national emergencies or general mobilizations, it may be denied or granted only restricted access to the Air Station facilities. In this event, the Department or authorized representative will reschedule the inspection or inspect only those areas to which access is granted.

5. Page 15 of 28, Section II.D. - In the event that several field investigations are required at a particular site (in order to fully define the nature and extent of contamination), request EPA clarify if an RFI Workplan submission will be required for each field investigation. If not, request EPA clarify the same procedures apply as outlined in our 03 Sep 92 letter concerning additional field work at Units 10 and 16. If the new workplan submission procedures are used (i.e. cover letter with a brief description of work to be performed as an enclosure) recommend we document field work results in a Technical Direction Memorandum (TDM).

6. Page 20 of 29, II.F.1. - Again, we request omission of the requirement for submission of CMS plan. The CMS plan is part of the overall CMS submission procedure as already defined in the Consent Order.

7. Page 23 of 29, Section II.J.2. - The HSWA permit for MCAS includes specific language concerning requests for extensions to the due dates specified within the permit. We request that the EPA add the following language to this section of the permit modification to clarify the procedures and acceptable rationales for the Navy/Marine Corps to request extensions to the due dates for submittals (Note: This text is taken from HSWA permits for other Navy/Marine Corps facilities):

8. II.J.2.a. - Requests for an Extension - Within 15 days of any anticipated need for a change in the corrective action compliance schedule, the Permittee shall submit a request for an extension to the Regional Administrator for approval.

9. II.J.2.a.1. - Contents for a Request for an Extension - Any request for an extension by the Permittee shall be submitted in writing and shall specify the following:

a. The corrective action requirement that is sought to be extended.

b. The length of the extension sought.

c. The good cause(s) for the extension; and

d. Any related corrective action requirement that would be affected if the extension were granted.

10. II.J.2.a.1.i. - What constitutes Good Cause - Good cause exists for an extension when sought in regard to the following:

a. An event of Force Majeure (as outlined in the Consent Order);

b. A delay caused by the good faith invocation of dispute resolution or the initiation of judicial action;

c. A delay caused, or which is likely to be caused, by the grant of an extension in regard to another corrective action requirement; and

d. Any other event or series of events mutually agree to by the Permittee and the U.S. EPA as constituting good cause.

11. II.J.2.a.2. - Disposition of the Request - U.S. EPA Review - Upon receipt of a request for an extension for corrective action activities from the Permittee, the U.S. EPA shall review the request and approve, modify and approve, or disapprove the request within fifteen (15) days. The U.S. EPA shall notify the Permittee of the decision of the request for an extension (approval, modifications or denial), and the basis for the modifications or denial which may have occurred through a phone conversation. The verbal communication shall be verified to the Permittee in writing.

12. II.J.2.a.2.ii. - Denial or Dispute of the Request - If the request for an extension is not approved, or the Permittee does not agree with the modifications, the Permittee may seek modification of this permit through 40 CFR 124.5, or the Permittee may seek and obtain a determination through any available existing dispute resolution process for Federal Facilities Corrective Actions, that may be established by the Administrator of the U.S. EPA and the Office of the Secretary of the Navy.

13. General: We suggest that EPA add the following text concerning funding of corrective actions to the HSWA permit as II.K. FUNDING FOR CORRECTIVE ACTION ACTIVITIES (Note: The following text was taken from HSWA permits at other Navy/Marine Corps facilities):

II.K FUNDING FOR CORRECTIVE ACTION ACTIVITIES

II.K.1. It is the expectation of the U.S. EPA and the Permittee that all obligations of the Permittee, for the facility MCAS Cherry Point (located in Havelock, North Carolina), arising under this permit will be fully funded. The Permittee agrees to seek sufficient funding through the Department of Defense (DoD) budgetary process to fulfill its obligations under this permit.

II.K.2. Congressional Annual Reports - The Permittee shall include in its annual reports to Congress, pursuant to CERCLA 120 (e) (5), (42 U.S.C. 9620 (e) (5)), the specific cost estimates and budgetary proposals associated with the implementation of corrective action requirements for this permit. A copy of the Congressional annual report shall be maintained by Navy/Marine Corps.

II.K.3. Obligation of Funds - Federal Facilities are required by Section 6001 of RCRA (42 U.S.C. 6961) to comply with all Federal and State requirements of RCRA. However, any requirements for the payment or obligation of funds, by the Permittee, established by the terms of this permit, shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation of payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. Section 1341. In cases where payment of obligation or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted.

II.K.4. Authorized Funding - Funds authorized and appropriated annually by Congress under the "Environmental Restoration, Defense" appropriation in the DoD Appropriation Act, and allocated to the Permittee by the DoD, will be the source of funds for corrective action activities at the MCAS Cherry Point facility required by this permit, consistent with the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 211 (10 U.S.C. Chapter 160). However, should the Environmental Restoration Defense appropriation be inadequate in any year to meet the Department of the Navy CERCLA implementation requirements, the DoD has agreed to employ, and the Permittee shall follow, a standardized DoD prioritization process which allocates that year's appropriation in a manner which maximizes the protection of human health and the environment. A standardized DoD prioritization model shall be developed and utilized with the assistance of the U.S. EPA and the State.

14. General: In order to ensure that workplans and reports submitted by the Navy/Marine Corps will receive a timely review by the EPA, we request that the EPA add a section (II.J.5. EPA REVIEWS OF REQUIRED SUBMITTALS) to this permit that specifies the time EPA will require to review and comment on the required submittals. We suggest that EPA specify a review time of 120 days per submittal, and that if the EPA does not provide comments to the Navy/Marine Corps within this review period, the EPA thereby confers tacit approval of the submittal.

15. Page BB-2, Appendix BB, in regard to the installation of new

"point of compliance well" at Unit 10, 60 days is insufficient time for procurement and completion of well installation. We would require 180 days from the effective date of the permit.

16. Page CC-2, Appendix CC, INSPECTIONS - Currently, field work at unit 10 is ongoing as we are attempting to define the extent of contamination. As such, we will not be able to submit a general inspection schedule with the remedial action system design plans within 90 days after the effective date of the permit. A CMS and selection of the corrective measures technology (which follows the completion of field work and submission of an RFI report) should be done before design plans are drafted. The general inspection schedule can be submitted 90 days after the approval of the remedial action system for unit 10.

17. Question for Clarification. Once issued, will the HSWA permit have to be modified to permit groundwater pump and treat systems to be installed aboard the Air Station or will they be operated under a Special Order by Consent or some other mechanism?

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

NOTICE OF RCRA FINAL PERMIT DECISION

Facility Name:	Marine Corps Air Station
EPA I.D. Number:	NC1 170 027 261
Location:	Cherry Point, North Carolina
Facility Operator:	Mr. R. D. Nelson Natural Resources and Environmental Affairs Officer Department of the Navy Marine Corps Air Station Cherry Point, North Carolina

After due consideration of the facts applicable to the above-named facility as they appear in the administrative record and the requirements and policies expressed in the Resource Conservation and Recovery Act (RCRA) and appropriate regulations, I determine that the permit should be issued without changes. Comments were received during the public participation period concerning the draft HSWA permit. The Agency's responses are provided in Attachment A, entitled "Response to Comments for the Draft HSWA Permit".

The administrative record with respect to this determination is maintained at the Agency's offices, 345 Courtland Street, N.E., Atlanta, Georgia 30365, and is available for public inspection between the hours of 9:00 a.m. and 3:00 p.m., Monday through Friday. For further information on this permit action contact Mr. Kelly Ewing at the above address.

Joseph R. Franzmathes
Director
Waste Management Division

SEP 30 1992
Date

ATTACHMENT A

RESPONSE TO COMMENTS FOR THE DRAFT HSWA PERMIT
Marine Corps Air Station
Cherry Point, North Carolina
EPA I.D. Number NC1 170 027 261

Response to Comment #5

RCRA Facility Investigation (RFI) Workplan submittals are required for each field investigation performed at the facility. The HSWA Permit defines the conditions under which an RFI Workplan must be submitted and how to report deviations from an approved RFI Workplan. Appendix B of the HSWA Permit and the RFI Guidance, EPA-530/SW-89-031, clarify the requirements for RFI Workplans. No changes will be made to the Draft Permit as a result of this comment.

Response to Comment #6

Condition II.F.1.a. states "The Permittee shall not be required to submit a CMS Plan for units addressed under Administrative Order On Consent, U.S. Docket No.: 89-13-R." to be consistent with the Administrative Order On Consent and the submission procedure defined therein. However, the Regional Administrator may require a CMS Plan for units that are not addressed under the Administrative Order On Consent, U.S. Docket No.: 89-13-R if it is determined that a Corrective Measures Study is required. No changes will be made to the Draft Permit as a result of this comment.

Response to Comments #7, #8, #9, #10, #11, and #12

As MCAS, Cherry Point, North Carolina stated in comment #7, "The HSWA Permit for MCAS includes specific language concerning requests for extensions to the due dates specified within the permit." The conditions stated in the HSWA Permit and the applicable regulations are sufficient to define the procedures and actions necessary to modify the Schedule of Compliance in Appendix D. Addition of the conditions proposed in comments #8, #9, #10, #11, and #12 would confuse rather than clarify the procedures. No changes will be made to the Draft Permit as a result of these comments.

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The North Carolina Department of Environment, Health, and Natural Resources will respond to these comments.

ATTACHMENT B

UNITED STATES MARINE CORPS
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA 28533-5001

IN REPLY REFER TO:
6280
LN
21 Sep 92

Mr. Jerome H. Rhodes
Chief, Hazardous Waste Section
North Carolina Department of Environment,
Health, and Natural Resources
P.O. Box 27687
Raleigh, North Carolina 27611-7687

RE: Hazardous Waste Management Draft Permit for Marine Corps Air Station, Cherry Point, North Carolina

Dear Mr. Rhodes:

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Sincerely,

R. D. NELSON
Natural Resources and
Environmental Affairs Officer
By direction of the
Commanding General

Encl:
(1) Comments to Hazardous Waste Draft Permit

Copy to:
Mr. Kelly Ewing (2 copies - w/encl)
U.S. Environmental Protection Agency
RCRA and Federal Facilities Branch
4-RCRA-WES-2
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Commander, Atlantic Division (2 copies - w/encl)
Naval Facilities Engineering Command
Attn: J. Steinberg (Code 1822)
Norfolk, Virginia 23511-6287

SEP 22 9 92 PM '92

Commandant of the Marine Corps (LFL) (1 copy - w/encl)
Headquarters, U.S. Marine Corps
Attn: John Burleson
2 Navy Annex
Washington, DC 20380-1775

COMMENTS TO HAZARDOUS WASTE DRAFT PERMIT
MARINE CORPS AIR STATION (MCAS), CHERRY POINT

1. Page I-7, paragraph I.4. and page V-2 paragraph E.5. These paragraphs require that the Point of Compliance well to be located at RFI Unit 10 be completed within 60 days of the effective date of the permit. Request that this time period be changed to 180 days to allow a sufficient time period for compliance with federal acquisition regulations and well permit application submittal and approval.

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HSWA PORTION OF THE RCRA PERMIT

OWNER: Department of the Navy
Marine Corps Air Station
Cherry Point, North Carolina 28533

Identification Number NC1 170 027 261
Permit Number NC1 170 027 261

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 USC §6901 et seq., commonly known as RCRA) and regulations promulgated thereunder by the U.S. Environmental Protection Agency (EPA) (codified and to be codified in Title 40 of the Code of Federal Regulations), a permit is issued to the Department of the Navy (hereafter called the Permittee), who owns or operates a hazardous waste facility located in Cherry Point, North Carolina latitude 34° 55′ 17" North and longitude 76° 53′ 36" West.

This Permit, in conjunction with the Hazardous Waste Management Permit issued by the State of North Carolina constitutes the RCRA permit for this facility. The Permittee shall be required to investigate any releases of hazardous waste or hazardous constituents pursuant to this permit at the facility regardless of the time at which waste was placed in such unit and to take appropriate corrective action for any releases. The Permit also requires the Permittee to comply with all land disposal restrictions applicable to this facility and to certify annually that on-site generation of hazardous waste is minimized to the extent practicable.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (including those in any attachments) and applicable regulations contained in 40 CFR Parts 260 through 264, 266, 268, 270, and 124 as specified in the permit and statutory requirements of RCRA, as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984, P.L. 98-616. Nothing in this permit shall preclude the Regional Administrator from reviewing and modifying the permit at any time during its term in accordance with 40 CFR §270.41 and Appendix E, as contained herein.

This Permit is based on the assumption that information and reports submitted to date, and subsequent to issuance of this permit by the Permittee are accurate. Any inaccuracies found in this information may be grounds for termination or modification of this permit in accordance with 40 CFR §270.41, §270.42, and §270.43 and potential enforcement action. The Permittee must inform EPA of any deviation from or changes in the information in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

The authority to perform all actions necessary to issue, modify, enforce, or revoke this permit has been delegated by the Regional Administrator to the Waste Management Division Director.

This Permit is effective as of October 30, 1992, and shall remain in effect until October 30, 2002, unless revoked and reissued, or terminated under 40 CFR §270.41 and §270.43 or continued in accordance with 40 CFR §270.51(a). All obligations for performance of Corrective Action are in effect until deemed complete by the Regional Administrator.

If any conditions of this permit are appealed in accordance with 40 CFR §124.19, the effective date of the conditions determined to be stayed in accordance with 40 CFR §124.16 shall be determined by final agency action as specified under 40 CFR §124.19.

SEP 30 1992
Issued

Joseph R. Franzmathes
Director
Waste Management Division

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PART I - STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

Compliance with this RCRA permit constitutes compliance, for purposes of enforcement, with Subtitle C of RCRA except for those requirements not included in the permit which become effective by statute, which are promulgated, or those which restrict placement of hazardous waste in or on the land. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Section 3008(a), 3008(h), 3004(v), 3008(c), 3007, 3013 or Section 7003 of RCRA, Sections 104, 106(a), 106(e), or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law providing for protection of public health or the environment.

The Administrative Order On Consent, U.S. Docket No.: 89-13-R that became effective on December 4, 1989 is hereby incorporated into this Permit by reference. A copy of the document is included as Appendix G. Pursuant to the Section 3008(h) Consent Order the facility has submitted Interim Measures and RCRA Facility Investigation Workplans. These workplans have been approved. A copy of the approval letter is included as Appendix H.

I.B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR §§270.41, 270.42, and 270.43 except for the Corrective Action schedule of compliance which shall be modified in accordance with Condition II.I. of this permit. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

I.C. SEVERABILITY

The provisions of this permit are severable, as specified in 40 CFR §124.16 and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

I.D. DUTIES AND REQUIREMENTS

I.D.1. Duty to Comply

The Permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

I.D.2. Duty to Reapply

If the Permittee will continue an activity allowed or required by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least one hundred eighty (180) calendar days before this permit expires, unless permission for a later date has been granted by the Regional Administrator.

I.D.3. Obligation for Corrective Action

Owners and operators of hazardous waste management units must have permits during the active life (including the closure period) of the unit, and for any period necessary to comply with the corrective action requirements (HSWA Section) of this permit.

I.D.4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.D.5. Duty to Mitigate

In the event of noncompliance with the permit, the Permittee shall take all reasonable steps to minimize releases of hazardous waste or hazardous constituents to the environment, and shall carry out such measures as are reasonable to prevent significant adverse effects on human health or the environment.

I.D.6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

I.D.7. Duty to Provide Information

The Permittee shall furnish to the Regional Administrator, within a reasonable time, any relevant information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

I.D.8. Inspection and Entry

The Permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

I.D.8.a. Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;

I.D.8.b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

I.D.8.c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated, or required under this permit; and

I.D.8.d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.D.9. Monitoring and Records

I.D.9.a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261 or an equivalent method approved by the Regional Administrator. Laboratory methods must be those specified in the most recent edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, or an equivalent method approved by the Regional Administrator.

I.D.9.b. The Permittee shall retain at the facility, or other appropriate location as provided for under 40 CFR Part 264, records of all monitoring information required under the terms of this permit, including all calibration and maintenance records, records of all data used to prepare documents required by this permit, copies of all reports and records required by this permit, the certification required by 40 CFR §264.73(b)(9), and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report, certification or application, or until corrective action is completed, whichever date is later. As a generator of hazardous waste, the Permittee shall retain on-site a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation produced pursuant to 40 CFR Part 268 for at least five years from the date that the waste which is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal, or until corrective action is completed, whichever date is later. At a facility permitted to operate an incinerator, the permittee shall retain on-site all records for a period of five years. These periods may be extended by request of the Regional Administrator at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

I.D.9.c. Records of monitoring information shall specify:

i. The dates, exact place, and times of sampling, or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The dates analyses were performed;

iv. The individuals who performed the analyses;

v. The analytical techniques or methods used; and

vi. The results of such analyses.

I.D.10. Reporting Planned Changes

The Permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility as defined in 40 CFR §270.2. This would apply to all contiguous land, structures, other appurtenances and improvements on the land, used for the treatment, storage or disposal of hazardous waste.

I.D.11. Anticipated Noncompliance

The Permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with the requirements of this permit.

I.D.12. Transfer of Permit

This permit may be transferred to a new owner or operator only after notice to the Regional Administrator and only if it is modified or revoked and reissued pursuant to 40 CFR §270.40(b) or §270.41(b)(2) to identify the new permittee and incorporate such other requirements as may be necessary under the appropriate Act. Before transferring ownership or operation of the facility during its operating life, or of a disposal facility during the post-closure care period, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Parts 264 and 270, HSWA and this permit.

I.D.13. Compliance Schedules

Written notification of compliance or noncompliance with any item identified in the compliance schedule of this permit shall be submitted according to each schedule date. If the Permittee does not notify the Regional Administrator within fourteen (14) calendar days of its compliance or noncompliance with the schedule, the Permittee shall be subject to an enforcement action. Submittal of a required item according to the schedule constitutes notification of compliance.

I.D.14. Twenty-four Hour Reporting

I.D.14.a. The Permittee shall report any noncompliance which may endanger human health or the environment. Any such information shall be reported orally to the RA within 24 hours from the time the Permittee becomes aware of the circumstances. This report shall include:

i. Information concerning the release of any hazardous waste or hazardous constituents which may endanger public drinking water supplies.

ii. Information concerning the release or discharge of any hazardous waste or hazardous constituents, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.

I.D.14.b. The description of the occurrence and its cause shall include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazard to the environment and human health outside the facility; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.D.14.c. A written report shall also be provided to the Regional Administrator within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Conditions I.D.14.a. and b.; a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

I.D.15. <u>Other Noncompliance</u>

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, at the time written reports as required by this permit are submitted. The reports shall contain the information listed in Condition I.D.14. as appropriate.

I.D.16. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in any document(s) submitted to the Regional Administrator, the Permittee shall promptly submit such facts or information.

I.E. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to the Regional Administrator shall be signed and certified in accordance with 40 CFR §270.11.

I.F. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR §270.12.

I.G. DEFINITIONS

For purposes of this permit, terms used herein shall have the same meaning as those in RCRA and 40 CFR Parts 124, 260, 261, 264, and 270, unless this permit specifically provides otherwise. Where terms are not defined in the regulation, the permit, or EPA guidelines or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

I.G.1. The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

I.G.2. A "hazardous constituent" for purposes of this permit are those substances listed in 40 CFR Part 261 Appendix VIII.

I.G.3. A "solid waste management unit" (SWMU) for the purposes of this permit includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. RCRA regulated hazardous waste management units are also solid waste management units. SWMUs include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g. product or process spills).

I.G.4. A "unit" for the purposes of this permit includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, or recycling unit.

I.G.5. A "release" for purposes of this permit includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

I.G.6. "Corrective measures" for purposes of this permit, include all corrective action necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit, as required under 40 CFR §264.101. Corrective measures may address releases to air, soils, surface water or groundwater.

I.G.7. "Area of concern" (AOC) for purposes of this permit includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Regional Administrator to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act and 40 CFR §270.32(b)(2) in order to ensure adequate protection of human health and the environment.

I.G.8. "Facility" for purposes of this permit includes any contiguous property and structures, other appurtenances, and improvements on the property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

I.G.9. "Land Disposal" for purposes of this permit and 40 CFR Part 268 means placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

PART II - CORRECTIVE ACTION

II.A. APPLICABILITY

The Conditions of this Part apply to:

II.A.1. The solid waste management units (SWMUs) and areas of concern (AOCs) identified in Appendix A-1, which require further investigation.

II.A.2. The SWMUs identified in Appendix A-2 and A-3, which require no further investigation at this time.

II.A.3. The SWMUs identified in Appendix A-4, which require confirmatory sampling.

II.A.4. Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means.

II.B. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs

II.B.1. The Permittee shall notify the Regional Administrator in writing, within fifteen (15) calendar days of discovery, of any additional SWMUs as discovered under Condition II.A.4.

II.B.2. The Permittee shall notify the Regional Administrator in writing, within fifteen (15) calendar days of discovery, of any additional AOCs as discovered under Condition II.A.4. The notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.). If the Regional Administrator determines that further investigation of an AOC is required, the permit will be modified in accordance with 40 CFR §270.41.

II.B.3. The Permittee shall prepare and submit to the Regional Administrator, within one hundred eighty (180) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified under Condition II.B.1. At a minimum, the SAR shall provide the following information:

a. Location of unit(s) on a topographic map of appropriate scale such as required under 40 CFR §270.14(b)(19).

b. Designation of type and function of unit(s).

c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

d. Dates that the unit(s) was operated.

e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on 40 CFR Part 261, Appendix VIII, constituents in the wastes.

f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater data, soil analyses, air, and/or surface water data).

II.B.4. Based on the results of the SAR, the Regional Administrator shall determine the need for further investigations at the SWMUs covered in the SAR. If the Regional Administrator determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.D.1.b.

II.C. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT PREVIOUSLY IDENTIFIED SWMUs or AOCs

II.C.1. The Permittee shall notify the Regional Administrator in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Condition II.A.2 or SWMUs identified in Condition II.A.4 for which further investigation under Condition II.B.4 was not required.

II.C.2. If the Regional Administrator determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.D.1.b.

II.D. RCRA FACILITY INVESTIGATION (RFI)

II.D.1. RFI Workplan(s)

II.D.1.a. Pursuant to Administrative Order On Consent, U.S. Docket No. : 89-13-R the Permittee has prepared and submitted a RCRA Facility Investigation (RFI) Workplan for those units identified in Condition II.A.1. This Workplan has been approved. Copies of the Administrative Order and approval letter are included in the Appendix of this Permit.

II.D.1.b. The Permittee shall prepare and submit to the Regional Administrator, within one hundred eighty (180) calendar days of notification by the Regional Administrator, an RFI Workplan for those units identified under Condition II.B.4 or Condition II.C.2. The RFI Workplan(s) shall be developed to meet the requirements of Condition II.D.1.c.

II.D.1.c. The RFI Workplan(s) shall meet the requirements of Appendix B. The RFI Workplan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of releases and the potential pathways of contaminant releases to the air, land, surface water, and groundwater. The Permittee must provide sufficient justification and/or documentation that a release is not probable if a unit or a media/pathway associated with a unit (groundwater, surface water, soil, subsurface gas, or air) is not included in the RFI Workplan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Regional Administrator. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix B. Such omissions or deviations are subject to the approval of the Regional Administrator. In addition, the scope of the RFI Workplan(s) shall include all investigations necessary to ensure compliance with 40 CFR §264.101(c).

II.D.1.d. The RFI Workplan(s) must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the RFI Workplan schedule in the letter approving the RFI Workplan(s). If the Regional Administrator disapproves the RFI Workplan(s), the Regional Administrator shall either (1) notify the Permittee in writing of the RFI Workplan's deficiencies and specify a due date for submission of a revised RFI Workplan, or (2) conditionally approve the RFI Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Workplan.

II.D.2. <u>RFI Implementation</u>

The Permittee shall implement the RFI(s) in accordance with the approved RFI Workplan(s) and Appendix B.

II.D.3. <u>RFI Reports</u>

II.D.3.a. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the RA with monthly RFI

Progress Reports (30 day intervals) beginning thirty (30) calendar days from the start date specified by the Regional Administrator in the RFI Workplan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the RFI completed;

ii. Summaries of findings;

iii. Summaries of all deviations from the approved RFI Workplan during the reporting period;

iv. Summaries of all problems or potential problems encountered during the reporting period;

v. Projected work for the next reporting period; and

vi. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

II.D.3.b. The Permittee shall prepare and submit to the Regional Administrator (RA) Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the RFI Workplan(s) submitted under Condition II.D.1. The Draft RFI Report(s) shall be submitted to the RA for review in accordance with the schedule in the approved RFI Workplan(s). The Final RFI Report(s) shall be submitted to the RA within forty five (45) calendar days of receipt of the RA comments on the Draft RFI Report. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, and a description of actual or potential receptors. The RFI Report(s) shall also describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative of the area. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.

II.D.3.c. The Regional Administrator will review the Final RFI Report(s) and notify the Permittee of the need for further investigative action and/or the need for a Corrective Measures Study to meet the requirements of II.G and 40 CFR §264.101. The RA will notify the permittee of any no further action decision.

II.E. INTERIM MEASURES (IM)

II.E.1. IM Workplan

II.E.1.a. Upon notification by the Regional Administrator, the Permittee shall prepare and submit an Interim Measures (IM) Workplan for any SWMU or AOC which the Regional Administrator determines poses a current or potential threat to human health or the environment. The IM Workplan shall be submitted within one hundred eighty (180) calendar days of such notification and shall include the elements listed in II.E.1.b. Such interim measures may be conducted concurrently with investigations required under the terms of this permit.

II.E.1.b. The IM Workplan shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and is consistent with and integrated into any long-term solution at the facility. The IM Workplan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

II.E.1.c. The IM Workplan must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the IM Workplan schedule in the letter approving the IM Workplan. If the Regional Administrator disapproves the IM Workplan, the Regional Administrator shall either (1) notify the Permittee in writing of the IM Workplan's deficiencies and specify a due date for submission of a revised IM Workplan, or (2) revise the IM Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Workplan.

II.E.1.d. Pursuant to Administrative Order On Consent, U.S. Docket No.: 89-13-R, the Permittee has prepared and submitted an Interim Measures (IM) Workplan as specified in Attachment A of the Administrative Order. This plan has been approved. A copy of the approval letter is included in Appendix G of this Permit.

II.E.2. IM Implementation

II.E.2.a. The Permittee shall implement the interim measures in accordance with the approved IM Workplan.

II.E.2.b. The Permittee shall give notice to the Regional Administrator as soon as possible of any planned changes, reductions or additions to the IM Workplan.

II.E.2.c. Final approval of corrective action required under 40 CFR §264.101 which is achieved through interim measures shall be in accordance with 40 CFR §270.41 and Condition II.G as a permit modification.

II.E.3. IM Reports

II.E.3.a. If the time required for completion of interim measures is greater than one year, the Permittee shall provide the RA with monthly progress reports (30 day intervals) beginning 30 calendar days from the start date specified by the RA in the Workplan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the interim measures completed;

ii. Summaries of all deviations from the IM Workplan during the reporting period;

iii. Summaries of all problems or potential problems encountered during the reporting period;

iv. Projected work for the next reporting period; and

v. Copies of laboratory/monitoring data.

II.E.3.b. The Permittee shall prepare and submit to the Regional Administrator, within ninety (90) calendar days of completion of interim measures conducted under Condition II.F, an Interim Measures (IM) Report. The IM Report shall contain the following information at a minimum:

i. A description of interim measures implemented;

ii. Summaries of results;

iii. Summaries of all problems encountered;

iv. Summaries of accomplishments and/or effectiveness of interim measures; and

v. Copies of all relevant laboratory/monitoring data, etc. in accordance with Condition I.D.9.

II.F CORRECTIVE MEASURES STUDY

II.F.1. Corrective Measures Study (CMS) Plan

II.F.1.a. The Permittee shall prepare and submit a CMS Plan for those units requiring a CMS within one hundred eighty (180) calendar days of notification by the Regional Administrator that a CMS is required. This CMS Plan shall be developed to meet the requirements of Condition II.F.1.b. The Permittee shall not be required to submit a CMS Plan for units addressed under Administrative Order On Consent, U.S. Docket No.: 89-13-R.

II.F.1.b. The CMS Plan shall meet the requirements of Appendix C. The CMS Plan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient justification and/or documentation for any unit deleted from the CMS Plan. Such deletion of a unit is subject to the approval of the Regional Administrator. The CMS shall be conducted in accordance with the approved CMS Plan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix C. Such omissions or deviations are subject to the approval of the Regional Administrator. The scope of the CMS Plan shall include all investigations necessary to ensure compliance with 3005(c)(3), 40 CFR §264.101, and §270.32. The Permittee shall implement corrective actions beyond the facility boundary, where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Regional Administrator that, despite the Permittee's best efforts, as determined by the RA, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis.

II.F.1.c. The Regional Administrator shall either approve or disapprove, in writing, the CMS plan. If the Regional Administrator disapproves the CMS Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the CMS Plan's deficiencies and specify a due date for submittal of a revised CMS Plan, or (2) revise the CMS Plan and notify the Permittee of the revisions. This modified CMS Plan becomes the approved CMS Plan.

II.F.2. Corrective Measures Study Implementation

The Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Plan, no later than fifteen (15) calendar days after the Permittee has received written approval from the Regional Administrator for the CMS Plan. Pursuant to Permit Condition II.G.1.b. the CMS shall be conducted in accordance with the approved CMS Plan.

II.F.3. CMS Report

II.F.3.a. The Permittee shall prepare and submit to the Regional Administrator a draft and final CMS Report for the study conducted pursuant to the approved CMS Plan. The draft CMS Report shall be submitted to the RA in accordance with the proposed schedule submitted concurrently with the RFI Final Report or within one hundred eighty (180) calendar days from the RA's approval of the CMS Plan. The final CMS Report shall be submitted to the RA within one hundred eighty (180) days of receipt of the RA's comments on the draft CMS Report. The CMS Report shall summarize any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. The CMS Report shall present all information gathered under the approved CMS Plan. The CMS Final Report must contain adequate information to support the Regional Administrator's decision on the recommended remedy, described under Permit Condition II.H.

II.F.3.b. If the Regional Administrator determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition II.G.3.a, the Regional Administrator may disapprove the CMS Final Report. If the Regional Administrator disapproves the CMS Final Report, the Regional Administrator shall notify the Permittee in writing of deficiencies in the CMS Final Report and specify a due date for submittal of a revised CMS Final Report. The RA will notify the Permittee of any no further action decision.

II.F.3.c. As specified under Permit Condition II.G.3.b, based on preliminary results and the CMS Final Report, the Regional Administrator may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

II.G. REMEDY APPROVAL AND PERMIT MODIFICATION

II.G.1. A remedy shall be selected from the remedial alternatives evaluated in the CMS. It will be based

at a minimum on protection of human health and the environment, as per specific site conditions, existing regulations, and guidance.

II.G.2. Pursuant to 40 CFR §270.41, a permit modification will be initiated by the Regional Administrator after recommendation of a remedy under Condition II.G.1. This modification will serve to incorporate a final remedy into this permit.

II.H. MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

II.H.1. If at any time the Regional Administrator determines that modification of the Corrective Action Schedule of Compliance is necessary, the RA may initiate a modification to the Schedule of Compliance (Appendix D).

II.H.2. Modifications that are initiated and finalized by the Regional Administrator according to proper procedure, as outlined in Appendix E, shall not be subject to administrative appeal.

II.H.3. Modifications to the Schedule of Compliance do not constitute a reissuance of the Permit.

II.H.4 The permittee may submit a proposed Corrective Action Management Plan (CAMP) to be used as the schedule of compliance in lieu of Appendix D. The CAMP shall become the enforceable Corrective Action Schedule of Compliance subject to the terms of this permit upon approval by the Regional Administrator. The Permittee may initiate a modification to the CAMP at any time subject to approval by the Regional Administrator and applicable requirements of 40 CFR Part 270.42. The CAMP shall address the following at a minimum:

- All documents listed in Appendix D;
- All SWMUs and AOCs listed in Appendix A as requiring corrective action pursuant to this permit; and
- A prioritization of all SWMUs and AOCs listed in Appendix A requiring corrective action pursuant to this permit;

Exceptions to due dates for submittals required under the CAMP may be provided pursuant to Condition II.J.2. of this permit and shall not be considered a modification to the CAMP or this permit.

II.I. IMMINENT HAZARDS

II.I.1. The Permittee shall report to the Regional Administrator any imminent or existing hazard to public health or the environment from any release of hazardous waste or hazardous constituents. Such information shall be reported orally within 24 hours from such time the Permittee becomes aware of the circumstances. This report shall include the information specified under Conditions I.D.14.a and b.

II.I.2. A written report shall also be provided to the Regional Administrator within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Conditions I.D.14.a and b; a description of the release and its cause; the period of the release; whether the release has been stopped; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the release.

II.J. PLAN AND REPORT REQUIREMENTS

II.J.1. All plans and schedules shall be subject to approval by the Regional Administrator prior to implementation. The Permittee shall revise all submittals and schedules as specified by the Regional Administrator. Upon approval the Permittee shall implement all plans and schedules as written.

II.J.2. The results of all plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Regional Administrator based on the Permittee's demonstration that sufficient justification for the extension exists.

II.J.3. If the Permittee at any time determines that the SAR information required under Condition II.B, the CS Workplan under II.D, or RFI Workplan(s) required under Condition II.E no longer satisfy the requirements of 40 CFR §264.101 or this permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended RFI Workplan(s) to the Regional Administrator within ninety (90) calendar days of such determination.

II.J.4. All reports shall be signed and certified in accordance with 40 CFR §270.11.

II.J.5. Three (3) copies of all reports and plans shall be provided by the Permittee to the Regional Administrator in care of the Chief, Federal Facilities Branch, Office of RCRA and Federal Facilities at the following address:

Mr. Jon Johnston
Chief, Federal Facilities Branch
Office of RCRA and Federal Facilities
Waste Management Division
Environmental Protection Agency
Region IV
RCRA-2
345 Courtland Street
Atlanta, Georgia 30365

Attention: Michelle Glenn

PART III - WASTE MINIMIZATION

III.A. GENERAL RESTRICTIONS

Pursuant to 40 CFR §264.73(b)(9), and Section 3005(h) of RCRA, 42 U.S.C. 6925(h), the Permittee must certify, no less often than annually, that:

III.A.1. The Permittee has a program in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and

III.A.2. The proposed method of treatment, storage or disposal is the most practicable method available to the Permittee which minimizes the present and future threat to human health and the environment.

III.B. The Permittee shall maintain copies of this certification in the facility operating record as required by 40 CFR §264.73(b)(9).

III.C. The Waste Minimization program required under II.A. above should address the objectives listed in Appendix F.

PART IV - LAND DISPOSAL RESTRICTIONS

IV.A. GENERAL RESTRICTIONS

IV.A.1. 40 CFR Part 268 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of 40 CFR Part 268. Where the Permittee has applied for an extension, waiver or variance under 40 CFR Part 268, the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such application.

IV.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

IV.B.1. A restricted waste identified in 40 CFR Part 268 Subpart C may not be placed in a land disposal unit without further treatment unless the requirements of 40 CFR Part 268 Subparts C and/or D are met.

IV.B.2. The storage of hazardous wastes restricted from land disposal under 40 CFR Part 268 is prohibited unless the requirements of 40 CFR Part 268 Subpart E are met.

PART V - ORGANIC AIR EMISSION REQUIREMENTS FOR PROCESS VENTS

V.A. GENERAL RESTRICTIONS

V.A.1. The permittee has no units at the time of permit issuance to which the Organic Air Emissions Requirements of 40 CFR 264, Subpart AA (for process vents) can be imposed, and is not required to submit informational requirements of 270.24. If the permittee should change or modify any unit which renders the unit's waste stream defined under the specific waste stream definition of this regulation or if there is a change in the waste stream which renders the unit subject to this regulation, the permittee is required to notify the EPA, comply with all 40 CFR, Subpart AA regulations and required to submit all 40 CFR 270.24 informational requirements within forty-five (45) calendar days of the waste stream change.

PART VI - ORGANIC AIR EMISSIONS REQUIREMENTS FOR EQUIPMENT

VI.A GENERAL RESTRICTIONS

VI.A.1. The permittee has no units at the time of permit issuance to which the Organic Air Emissions Requirements of 40 CFR 264, Subpart BB (for equipment) can be imposed, and is not required to submit informational requirements of 270.25. If the permittee should change or modify any unit which renders the unit's waste stream defined under the specific waste stream definition of this regulation or if there is a waste stream change which renders the unit subject to this regulation, the permittee is required to notify the EPA, comply with all 40 CFR, Subpart BB regulations and required to submit all 40 CFR 270.25 informational requirements within forty-five (45) calendar days of the waste stream change.

APPENDIX A

SUMMARY OF SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

APPENDIX A-1

Solid waste management unit and area of concern numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report. The designation used in the Administrative Order is also listed for cross referencing.

List of Solid Waste Management Units and Areas of Concern requiring an RFI:

SWMU/AOC No. RFA	ORDER	Description
F-13	a.	Crash Crew Burn Pit
F-14	b.	Crash Crew Burn Pit Oil/Water Separator
F-22	c.	VMGR 252 Accumulation Area
F-38	d.	Crash Crew Accumulation Area
F-42	e.	MAG 14 Accumulation Area #2
S-6	g.	H & HS 28 Former Accumulation Area (Formerly 2nd LADD Accumulation Area)
S-11	i.	MWCS 28 Accumulation Area
S-A(AOC)	j.	Fuel Line Leak Site
C-8	o.	Construction Landfill
C-11	q.	Current Sludge Application Area
C-13	s.	Drainage System
C-15	t.	Oil/Water Separators
C-17	u.	Leach Fields
C-A(AOC)	v.	PCB Transformer Spill
I-1	w.	Borrow Pit/Landfill
I-2	x.	Borrow Pit/Dump Site
I-3	y.	EOD Pit/Landfill
I-5	z.	Storage Tank (100,000 gallons for waste POL)
I-6	aa.	Fly Ash Ponds
I-7	bb.	Old Incinerator and Adjacent Area
I-10a	cc.	Old Sanitary Landfill
I-12	dd.	Crash Crew Training Area
I-15	ee.	Area and Ditch Behind Naval Aviation Depot (NADEP)
I-16	ff.	Landfill at Sandy Branch
I-17	gg.	Defense Property Disposal Office Storage Area
I-19	hh.	Borrow Pit/Landfill (North of Runway 32)
I-21	ii.	Borrow Pit/Landfill (South of Runway 32)

List of Solid Waste Management Units or Areas of Concern that require no further action at this time.

SWMU/AOC No. RFA	Description
F-1	HMS 14 Wash Rack
F-2	HMS 14 Underground Storage Tank
F-3	Hanger 250 Sump
F-4	VMGR 252 Aircraft Wash Rack
F-5	VMAQ 2 Aircraft Wash Rack
F-6	VMA 332 Aircraft Wash Rack
F-7	HMS 32 Wash Rack
F-8	MAG 32 Underground Waste Oil Storage Tank
F-9	MAG 32 Underground Waste Hydraulic Fluid Storage Tank
F-10	MAG 32 Paint Booth
F-11	VMA 542 Waste Oil Above-ground Storage Tank
F-12	MAG 32 Aircraft Wash Rack and Sump
F-15	Crash Crew Fuel Tanker
F-16	HMS 14 Accumulation Area
F-17	HMS 14 Spent Battery Storage Area
F-18	HMS 14 GSE #1 Accumulation Area
F-19	HMS 14 GSE #2 Accumulation Area
F-20	VMGR 253 #1 Accumulation Area
F-21	VMGR 253 #2 Accumulation Area
F-23	VMAQ 2 Accumulation Area
F-24	HMS 14 (Building 130) Accumulation Area
F-25	VMA 332 Accumulation Area
F-26	VMA 533 Accumulation Area
F-27	SOES Accumulation Area
F-28	VMAT 203 Accumulation Area
F-29	HMS 32 #1 Accumulation Area
F-30	HMS 32 #2 Accumulation Area
F-31	HMS 32 GSE #1 Accumulation Area
F-32	HMS 32 GSE #2 Accumulation Area
F-33	VMA 223 Accumulation Area
F-34	VMA 542 #1 Accumulation Area
F-35	VMA 542 #2 Accumulation Area
F-36	VMA 231 Accumulation Area
F-37	VMA 331 Accumulation Area
F-39	HMS 32 Accumulation Area
F-40	Crash Crew Burn Pit Accumulation Area
F-41	MAG 32 Accumulation Area #1
N-1	Paint Shop Water Curtain
N-2	Plating Shop Cleaning Vats
N-3	Metal Plating Shop Degreaser
N-4	Metal Cleaning Shop Vats

APPENDIX A-2
(continued)

N-5		Cleaning Shop Vats
N-6		Chemical Stripline Cleaning Vats
N-7		Photo Lab and Cleaning Shop Holding Tank
N-8		Silver Recovery Tank in Photo Shop
N-9		Roto Head Repair Shop Parts Cleaner
N-10		Down Draft Paint Sump
N-11		Zinc Rinse Tank Sump
N-12		Plating System Tank
N-13		Anodizing Solution Tank
N-14		Typical Container Accumulation Area
N-15		Electroplating Shop Sump
N-16		Paint Shop Water Curtain
N-17		Cleaning Vats
N-18		Aircraft Paint Stripping Shop Sump
N-19		Central Transfer Area
N-20		Down Draft Aircraft Paint Booth
N-21		Plastic Media Blasting Cyclone
N-22	f.	NARF Former Drum Storage Area
S-1		Boat Dock Waste Oil Above-ground Storage Tank
S-2		Navy Boat Dock Accumulation Area
S-3		Generator Shop Accumulation Area
S-4		MWSS 271 Accumulation Area
S-5		MWSS 274 Accumulation Area
S-7		MACS 6 Accumulation Area
S-8		MACS 6 Wash Rack
S-9		MASS 1 Accumulation Area
S-10	h.	MASS 1 Wash Rack and Oil/Water Separator
S-12		Pesticide Mixing Area
C-3		PCB-Contaminated Soil Pile
C-4	m.	Industrial Wastewater Treatment Plant
C-5	n.	Sewage Treatment Plant
C-6		Fly Ash Holding Tank
C-7		Coal Yard Catchment Basin
C-9		Asbestos Disposal Area
C-10	p.	Former Sludge Application Area
C-12	r.	Polishing Ponds #1 and #2
C-14		Underground Storage Tanks
C-16		PCB Transformer Storage Area
I-4		Borrow Pit/Landfill (North of Runway 14)
I-8		Tank Farm B
I-9		Tank Farm D
I-10c	cc.	Old Sanitary Landfill Sludge Application Site
I-11		MAG 14 Supply Site
I-13		Tank Farm A
I-14		Motor Transportation
I-18		Facilities Maintenance Compound
I-20		Training Area Four

APPENDIX A-3

List of Solid Waste Management Units regulated by the State's portion of the RCRA permit:

SWMU/AOC No. RFA	ORDER	Description
C-1	k.	DRMO Hazardous Waste Storage Facility
C-2	l.	Facilities Maintenance Hazardous Waste Storage Facility
I-10b	cc.	Sludge Pits

APPENDIX A-4

List of Solid Waste Mangement Units and Areas of Concern Requiring Confirmatory Sampling

SWMU No.	*Description*
There were no SWMUs in this category.	

APPENDIX B

RCRA Facility Investigation (RFI) Workplan Outline

APPENDIX B

RCRA FACILITY INVESTIGATION (RFI) WORKPLAN OUTLINE

I. RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare a RCRA Facility Investigation (RFI) Workplan that meets the requirements of Part II of this document and the RFI Guidance, EPA-530/SW-89-031. This Workplan shall also include the development of the following plans, which shall be prepared concurrently:

A. Project Management Plan

Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Sampling and Analysis Plan(s)

The Permittee shall prepare a plan to document all monitoring procedures: field sampling, sampling procedures and sample analysis performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented. The Sampling Strategy and Procedures shall be in accordance with Characterization of Hazardous Waste Sites A Methods Manual: Volume II., Available Sampling Methods, EPA-600/4-84-076, or EPA Region IV Engineering Support Branch's Standard Operating Procedure and Quality Assurance Manual (SOP). Any deviations from these references must be requested by the applicant and approved by EPA. The Sampling and Analysis Plan must specifically discuss the following unless the EPA-600/4-84-076 or SOP procedures are specifically referenced.

1. Sampling Strategy

   a. Selecting appropriate sampling locations, depths, etc.;

   b. Obtaining all necessary ancillary data;

   c. Determining conditions under which sampling should be conducted;

d. *Determining which media are to be sampled (e.g., groundwater, air, soil, sediment, subsurface gas);*

e. *Determining which parameters are to be measured and where;*

f. *Selecting the frequency of sampling and length of sampling period;*

g. *Selecting the types of samples (e.g., composites vs. grabs) and number of samples to be collected.*

2. *Sampling Procedures*

a. *Documenting field sampling operations and procedures, including;*

i) *Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and absorbing reagents);*

ii) *Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;*

iii) *Documentation of specific sample preservation method;*

iv) *Calibration of field instruments;*

v) *Submission of field-biased blanks, where appropriate;*

vi) *Potential interferences present at the facility;*

vii) *Construction materials and techniques, associated with monitoring wells and piezometers;*

viii) *Field equipment listing and sampling containers;*

ix) *Sampling order; and*

x) *Decontamination procedures.*

b. *Selecting appropriate sample containers;*

c. *Sampling preservation; and*

d. *Chain-of-custody, including:*

i) *Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and*

ii) *Pre-prepared sample labels containing all information necessary for effective sample tracking.*

3. *Sample Analysis*

Sample analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods" (third edition). The sample analysis section of the Sampling and Analysis Plan shall specify the following:

a. *Chain-of-custody procedures, including:*

i) *Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;*

ii) *Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and*

iii) *Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.*

b. *Sample storage;*

c. *Sample preparation methods;*

d. *Analytical Procedures, including:*

i) *Scope and application of the procedure;*

ii) *Sample matrix;*

iii) *Potential interferences;*

iv) *Precision and accuracy of the methodology; and*

v) *Method detection limits.*

e. *Calibration procedures and frequency;*

f. *Data reduction, validation and reporting;*

g. *Internal quality control checks, laboratory performance and systems audits and frequency, including:*

i) *Method blank(s);*

ii) *Laboratory control sample(s);*

iii) *Calibration check sample(s);*

iv) *Replicate sample(s);*

v) *Matrix-spiked sample(s);*

vii) *Control charts;*

viii) *Surrogate samples;*

ix) *Zero and span gases; and*

x) *Reagent quality control checks.*

h. *Preventive maintenance procedures and schedules;*

i. *Corrective action (for laboratory problems); and*

j. *Turnaround time.*

C. *Data Management Plan*

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. *Data Record*

The data record shall include the following:

a. *Unique sample or field measurement code;*

b. *Sampling or field measurement location and sample or measurement type;*

c. *Sampling or field measurement raw data;*

d. *Laboratory analysis ID number;*

e. *Property or component measures; and*

f. *Result of analysis (e.g. concentration).*

2. *Tabular Displays*

The following data shall be presented in tabular displays:

a. *Unsorted (raw) data;*

b. *Results for each medium, or for each constituent monitored;*

c. *Data reduction for statistical analysis, as appropriate;*

d. *Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and*

e. *Summary data*

3. *Graphical Displays*

The following data shall be presented in graphical formats (e. g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transits, three dimensional graphs, etc.):

a. *Display sampling location and sampling grid:*

b. *Indicate boundaries of sampling area, and area where more data are required;*

c. *Display geographical extent of contamination;*

d. *Illustrate changes in concentration in relation to distances from the source, time, depth or other parameters; and*

e. *Indicate features affecting inter-media transport and show potential receptors.*

II. RCRA Facility Investigation (RFI) Requirements

RCRA Facility Investigation:

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of release of hazardous constituents (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical content and quality to support the development and evaluation of the corrective action plan if necessary. The information contained in a RCRA Part B permit application and/or RCRA Section 3019 Exposure Information Report may be referenced as appropriate.

All sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and/or verify Part B information on the environmental setting at the facility. The Permittee shall characterize the following as they relate to identified sources, pathways and areas of releases of hazardous constituents from Solid Waste Management Units.

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground-water flow beneath the facility, including:

i) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;

ii) Structural geology: description of local and regional structural features (e. g., folding, faulting, tilting, jointing, etc.);

iii) Depositional history;

iv) *Regional and facility specific ground-water flow patterns; and*

v) *Identification and characterization of areas and amounts of recharge and discharge.*

b. *An analysis of any topographic features that might influence the ground-water flow system.*

c. *Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i. e., the aquifers and any intervening saturated and unsaturated units), including:*

i) *Hydraulic conductivity and porosity (total and effective);*

ii) *Lithology, grain size, sorting, degree of cementation;*

iii) *An interpretation of hydraulic interconnections between saturated zones; and*

iv) *The attenuation capacity and mechanisms of the natural earth materials (e. g., ion exchange capacity, organic carbon content, mineral content etc.).*

d. *Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:*

i) *Water-level contour and/or potentiometric maps;*

ii) *Hydrologic cross sections showing vertical gradients;*

iii) *The flow system, including the vertical and horizontal components of flow; and*

iv) *Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.*

e. *A description of man-made influences that may affect the hydrology of the site, identifying:*

   i) *Local water-supply and production wells with an approximate schedule of pumping; and*

   ii) *Man-made hydraulic structures (pipelines, french drains, ditches, etc.).*

2. *Soils*

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of contaminant release(s). Such characterization may include, but not be limited to, the following types of information as appropriate:

a. *Surface soil distribution;*
b. *Soil profile, including ASTM classification of soils;*
c. *Transects of soil stratigraphy;*
d. *Hydraulic conductivity (saturated and unsaturated);*
e. *Relative permeability;*
f. *Bulk density;*
g. *Porosity;*
h. *Soil sorption capacity;*
i. *Cation exchange capacity (CEC);*
j. *Soil organic content;*
k. *Soil pH;*
l. *Particle size distribution;*
m. *Depth of water table;*
n. *Moisture content;*
o. *Effect of stratification on unsaturated flow;*
p. *Infiltration;*
q. *Evapotranspiration;*
r. *Storage capacity;*
s. *Vertical flow rate; and*
t. *Mineral content.*

3. *Surface Water and Sediment*

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterization may include, but not be limited to, the following activities and information:

a. *Description of the temporal and permanent surface water bodies including:*

i) *For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;*

ii) *For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;*

iii) *For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i. e., 100 year event), discharge point(s), and general contents.*

iv) *Drainage patterns; and*

v) *Evapotranspiration.*

b. *Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients, chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.*

c. *Description of sediment characteristics including:*

i) *Deposition area;*

ii) *Thickness profile; and*

iii) *Physical and chemical parameters (e. g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)*

4. *Air*

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

a. *A description of the following parameters:*

i) *Annual and monthly rainfall averages;*

ii) *Monthly temperature averages and extremes;*

iii) *Wind speed and direction;*

iv) *Relative humidity/dew point;*

v) *Atmospheric pressure;*

vi) *Evaporation data;*

vii) *Development of inversions; and*

viii) *Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence. (i. e. Hurricanes)*

b. *A description of topographic and man-made features which affect air flow and emission patterns, including:*

i) *Ridges, hills or mountain areas;*

ii) *Canyons or valleys;*

iii) *Surface water bodies (e. g. rivers, lakes, bays, etc.); and*

iv) *Buildings.*

B. *Source Characterization*

For those sources from which releases of hazardous constituents have been detected the Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety risks, including: type, quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e. g., facility security, and engineering barriers). This shall include quantification of the following specific characteristics, at each source area:

1. *Unit/Disposal Area Characteristics:*

a. *Location of unit/disposal area;*
b. *Type of unit/disposal area;*
c. *Design features;*
d. *Operating practices (past and present)*
e. *Period of operation;*
f. *Age of unit/disposal area;*
g. *General physical conditions; and*
h. *Method used to close the unit/disposal area.*

2. *Waste Characteristics*:

a. *Type of wastes placed in the unit;*

i) *Hazardous classification (e. g., flammable, reactive, corrosive, oxidizing or reducing agent);*

ii) *Quantity; and*

iii) *Chemical composition.*

b. *Physical and chemical characteristics such as;*

i) *Physical form (solid, liquid, gas);*

ii) *Physical description (e. g., powder, oily sludge);*

iii) *Temperature;*

iv) *pH;*

v) *General chemical class (e. g., acid, base, solvent);*

vi) *Molecular weight;*

vii) *Density;*

viii) *Boiling point;*

ix) *Viscosity;*

x) *Solubility in water;*

xi) *Cohesiveness of the waste; and*

xii) *Vapor pressure.*

c. *Migration and dispersal characteristics of the waste such as:*

i) *Sorption capability;*

ii) *Biodegradability, bioconcentration, biotransformation;*

iii) *Photodegradation rates;*

iv) *Hydrolysis rates; and*

v) *Chemical transformations.*

The Permittee shall document the procedures used in making the above determinations.

C. *Characterization of Releases of Hazardous Constituents*

The Permittee shall collect analytical data on groundwater, soils, surface water, sediment, and subsurface gas contamination in the vicinity of the facility in accordance with the sampling and analysis plan as required above. These data shall be sufficient to define the extent, origin, direction, and rate of movement of contamination. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Permittee shall address the following types of contamination at the facility:

1. *Groundwater Contamination*

The Permittee shall conduct a groundwater investigation to characterize any plumes of contamination detected at the facility. This investigation shall at a minimum provide the following information:

a. *A description of the horizontal and vertical extent of any plume(s) of hazardous constituents originating from or within the facility;*

b. *The horizontal and vertical direction of contamination movement;*

c. *The velocity of contaminant movement;*

d. *The horizontal and vertical concentration profiles of hazardous constituents in the plume(s);*

e. *An evaluation of factors influencing the plume movement; and*

f. *An extrapolation of future contaminant movement.*

The Permittee shall document the procedures used in making the above determinations (e. g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the saturated zone in the vicinity of any contaminant release. The investigation may include the following information:

a. A description of the vertical and horizontal extent of contamination;

b. A description of appropriate contaminant and soil chemical properties within the contaminant source area and plume. This may include contaminant solubility, speciation, absorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contaminant movement; and

e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from releases of hazardous constituents at the facility.

The investigation may include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any plume(s) originating from the facility, and the extent of contamination in underlying sediments;

b. The horizontal and vertical direction of contaminant movement;

c. The contaminant velocity;

d. *An evaluation of the physical, biological and chemical factors influencing contaminant movement;*

e. *An extrapolation of future contaminant movement; and*

f. *A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.*

4. *Air Contamination*

The Permittee shall conduct an investigation to characterize gaseous releases of hazardous constituents into the atmosphere or any structures or buildings. This investigation may provide the following information:

a. *A description of the horizontal and vertical direction and velocity of contaminant movement;*

b. *The rate and amount of the release; and*

c. *The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.*

The Permittee shall document the procedures used in making the above determinations.

D. *Potential Receptors*

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples and/or data on observable effects in ecosystems may also be obtained as appropriate. The following characteristics shall be identified:

1. *Current local uses and planned future uses of groundwater:*

a. *Type of use (e. g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and*

b. *Location of ground water users, to include withdrawal and discharge wells, within one mile of the impacted area.*

The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. *Current local uses and planned future uses of surface waters directly impacted by the facility:*

   a. *Domestic and municipal (e. g., potable and lawn/gardening watering);*
   b. *Recreational (e. g. swimming, fishing);*
   c. *Agricultural;*
   d. *Industrial; and*
   e. *Environmental (e. g., fish and wildlife propagation).*

3. *Human use of or access to the facility and adjacent lands, including but not limited to:*

   a. *Recreation;*
   b. *Hunting;*
   c. *Residential;*
   d. *Commercial; and*
   e. *Relationship between population locations and prevailing wind direction.*

4. *A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.*

5. *A general description of the ecology within area the area adjacent to the facility.*

6. *A general demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.*

7. *A description of any known or documented endangered or threatened species near the facility.*

APPENDIX C

Corrective Measures Study (CMS) Plan Outline

APPENDIX C

CORRECTIVE MEASURE STUDY (CMS) PLAN OUTLINE

I. Identification and Development of the Corrective Measure Alternatives

   A. Description of Current Situation
   B. Establishment of Corrective Action Objectives
   C. Screening of Corrective Measures Technologies
   D. Identification of the Corrective Measure Alternatives

II. Evaluation of the Corrective Measure Alternatives

   A. Technical/Environmental/Human Health/Institutional
   B. Cost Estimate

II. Justification and Recommendation of the Corrective Measure or Measures

   A. Technical
   B. Environmental
   C. Human Health

III. Reports

   A. Draft
   B. Final
   C. Public Review and Final Selection of Corrective Measure

I. IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURES ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified potential corrective measure technologies, the Permittee shall identify, screen and develop the alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation (RFI) Report. The Permittee shall provide an update to information presented in the RFI regarding previous response activities and interim measures which have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee shall propose facility-specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RFI, EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning ground water releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR §264.100.

C. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and assess the technologies which are applicable at the facility. The Permittee shall screen the corrective measure technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

2. Waste Characteristics

   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

3. Technology Limitations

   During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternatives

The Permittee shall develop the Corrective measure alternatives based on the corrective action objectives and analysis of potential corrective measure technologies. The Permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternatives. The alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies.

II. EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the initial screening and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical;

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

a. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:

i) Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

ii) Useful life is defined as the length of time the level of desired effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Respondent should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

i) Constructability is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

ii) Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental;

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short- and long-term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health

The Permittee shall assess each alternative in terms of the extent to which it mitigates short-and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the concentrations and characteristics of the contaminants on-site, potential exposure routes, and potentially affected population. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, state and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative. If the selected remedy is capping and closure in place, a notation must be made in the land deed.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

   a. Direct capital costs include:

      i) Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.

      ii) Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;

      iii) Land and site-development costs: Expenses associated with purchase of land and development of existing property; and

      iv) Buildings and services costs: Costs of process and nonprocess buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:

i) Engineering expenses: Costs of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;

ii) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;

iii) Startup and shakedown costs: Costs incurred during corrective measure startup; and

iv) Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxillary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;

f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accident insurance; real estate taxes on purchased land or right-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other costs: Items that do not fit any of the above categories.

III. JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Regional Administrator will select the corrective measure alternative or alternatives to be implemented based on the results obtained from work completed under Section II and III. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proved effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operating to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure(s) must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure(s) posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

IV. REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results obtained fron Sections I through III and recommending a corrective measure alternative. Copies of the preliminary report shall be provided by the Permittee to the Regional Administrator (RA) for review and approval.

A. Draft

The Report shall at a minimum include:

1. A description of the facility;

   a. Site topographic map & preliminary layouts.

2. A summary of the corrective measure(s) and rationale for selection;

   a. Description of the corrective measure(s) and rationale for selection;

   b. Performance expectations;

   c. Preliminary design criteria and rationale;

   d. General operation and maintenance requirements; and

   e. Long-term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;

   a. Field studies (ground-water, surface water, soil, air); and

   b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions;

   a. Special technical problems;

   b. Additional engineering data required;

   c. Permits and regulatory requirements;

   d. Access, easements, right-of-way;

   e. Health and safety requirements; and

   f. Community relations activities.

5. Cost Estimates and Schedules;

   a. Capitol cost estimate;

   b. Operation and maintenance cost estimate; and

   c. Project schedule (design, construction, operation).

Copies of the draft shall be provided by the Permittee to EPA.

B. Final

The Permittee shall finalize the Corrective Measure Study Report incorporating comments received from EPA on the Draft Corrective Measure Study Report. The report shall become final upon approval by the RA.

C. Public Review and Final Selection of Corrective Measures

Upon receipt of the Final Corrective Measure Study Report, EPA shall announce its availability to the public for review and comment. At the end of the comment period, the RA shall review the comments and then inform the Permittee of the final decision as to the approved Corrective Measures to be implemented.

APPENDIX D

Schedule of Compliance

APPENDIX D

Schedule of Compliance

Schedule of Compliance	Due Date
Notification of Newly Identified SWMUs and AOCs Condition II.B.1 and Condition II.B.2.	Within fifteen (15) calendar days of discovery
SWMU Assessment Report Condition II.B.3.	Within one hundred eighty (180) calendar days of notification
Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs Condition II.C.1.	Within fifteen (15) calendar days of discovery
RFI Workplan for SWMU(s) and AOC(s) identified under Condition II.B.4., Condition II.C.2., and Condition II.D.1.b.	Within one hundred eighty (180) calendar days of receipt of notification by RA which SWMUs or AOCs require an RFI
RFI Progress Reports Condition II.D.3.a.	Monthly, beginning thirty (30) calendar days from the start date specified by the RA*
Draft RFI Report Condition II.D.3.b.	In accordance with the approved RFI Workplan
Final RFI Report Condition II.D.3.b.	Within forty five (45) calendar days after receipt of RA comments on Draft RFI Report

In the event of conflicts between the Schedule of Compliance of this permit as stated in Appendix D and scheduled dates of compliance in the Administrative Order on Consent, U.S. Docket No.: 89-13-R, the dates stated in the order will take precedence as long as the order is in effect.

Schedule of Compliance	Due Date
Interim Measures Workplan Condition II.E.1.a.	Within one hundred eighty (180) calendar days of notification by RA
Interim Measures Progress Reports Condition II.E.3.a.	Monthly, beginning 30 days from start date specified by the RA**
Interim Measure Report Condition II.E.3.b.	Within ninety (90) calendar days of completion
CMS Plan Condition II.F.1.a.	Within one hundred eighty (180) calendar days of notification by RA that a CMS Plan is needed
Draft CMS Report Condition II.F.3.a	Within one hundred eighty (180) calendar days of RA's approval of CMS Plan or per RFI Report schedule
Final CMS Report Condition II.F.3.a.	Within one hundred eighty (180) calendar days of RA's comments on draft CMS Report
Imminent Hazard Report Condition II.I.1. and II.I.2.	Oral within 24 hours; Written within fifteen (15) calendar days
Waste Minimization Certification Condition III.A	Annually from effective date of permit
Organic Air Emission for Process Vents and Equipment, Part V and Part VI	Within forty five (45) days of the facility's change in waste stream.

The above reports must be signed and certified in accordance with 40 CFR §270.11.

* This applies to Workplan execution that requires more than one hundred eighty (180) calendar days.

** This applies to Workplan execution that requires more than one year.

APPENDIX E

Modification of the Corrective Action Schedule of Compliance

MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

I. If at any time the Regional Administrator determines that modifications of the Corrective Action Schedule of Compliance is necessary, he or she may initiate a modification to the Schedule of Complaince according to this procedure. If the Regional Administrator initiates a modification, he or she shall:

A. Notify the Permittee in writing of the proposed modification and the date by which comments on the proposed modification must be received; and

B. Publish a notice of the proposed modification in a locally distributed newspaper, mail a notice to all persons on the facility mailing list maintained according to 40 CFR §124.10(c)(viii), and place a notice in the facility's information repository (i.e., a central source of all pertinent documents concerning the remedial action, usually maintained at the facility or some other public place, such as a public library, that is accessible to the public) if one is required.

1. If the Regional Administrator receives no written comment on the proposed modification, the modification shall become effective five (5) calendar days after the close of the comment period.

2. If the Regional Administrator receives written comment on the proposed modification, the Regional Administrator shall make a final determination concerning the modification after the end of the comment period.

C. Notify the Permittee in writing of the final decision.

1. If no written comment was received, the Regional Administrator shall notify individuals on the facility mailing list in writing that the modification has become effective and shall place a copy of the modified Corrective Action Schedule of Compliance in the information repository, if a repository is required for the facility.

2. If written comment was received, the Regional Administrator shall provide notice of the final modification decision in a locally distributed newspaper and place a copy of the modified Corrective Action Schedule of Compliance in the information repository, if a repository is required for the facility.

II. Modifications that are initiated and finalized by the Regional Administrator according to this procedure shall not be subject to administrative appeal.

III. Modifications to the Corrective Action Schedule of Compliance do not constitute a reissuance of the Permit.

APPENDIX F

Waste Minimization Objectives

APPENDIX F

Waste Minimization Certification Objectives

The Waste Minimization Program should include the following elements:

1. Top Management Support

   - Dated and signed policy describing management support for waste minimization and for implementation of a waste minimization plan.
   - Description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.
   - Description of how a waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations, and maintenance.

2. Characterization of Waste Generation

   - Identification of types, amounts, and hazardous constituents of waste streams, with the source and date of generation.

3. Periodic Waste Minimization Assessments

   - Identification of all points in a process where materials can be prevented from becoming a waste, or can be recycled.
   - Identification of potential waste reduction and recycling techniques applicable to each waste, with a cost estimate for capital investment and implementation.
   - Description of technically and economically practical waste reduction/recycling options to be implemented, and a planned schedule for implementation.
   - Specific performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the generator.

4. Cost Allocation System

   - Identification of waste management costs for each waste, factoring in liability, transportation, recordkeeping, personnel, pollution control, treatment, disposal, compliance and oversight costs to the extent feasible.
   - Description of how departments are held accountable for the wastes they generate.
   - Comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste.

5. Technology Transfer

- Description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

6. Program Evaluation

- Description of types and amounts of hazardous waste reduced or recycled.
- Analysis and quantification of progress made relative to each performance goal established and each reduction technique to be implemented.
- Amendments to waste minimization plan and explanation.
- Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.
- Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

References: "Draft Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program", 54 FR 25056, June 12, 1989.

"Waste Minimization Opportunity Assessment Manual", EPA/625/7-88/003, July 1988.

APPENDIX G

Copy of 3008(h) Administrative Order

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET N.E.
ATLANTA, GEORGIA 30365

DEC 4 1989

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Nancy S. Stehle
Deputy Director for the Environment
Office of the Assistant Secretary (SL)
Department of the Navy
Crystal Plaza Five, Room 218
Washington, D.C. 20360-5000

Dear Ms. Stehle:

Please find enclosed a copy of the final 3008(h) Administrative Order on Consent for Marine Corps Air Station (MCAS) Cherry Point. I am encouraged that EPA and the Department of the Navy could work together to negotiate the first RCRA corrective action order for a Department of Defense facility.

In your November 2, 1989 letter accompanying the 3008(h) Order, concerns were again raised with respect to the involvement of the State and the recognition of work completed under the Department of the Navy's Installation Restoration Program (IRP). During the negotiations, EPA and the Department of the Navy worked together to incorporate the IRP data into the work requirements of the Order and to identify any supplemental work required. The State of North Carolina was involved in this stage and will continue to take an active role throughout the corrective action process.

It is also the goal of EPA to make this agreement work. EPA recognizes that unforeseen problems will arise that will require diplomacy and common sense by all parties involved. Through combined efforts, the Order can provide the comprehensive strategy for the investigation and remediation of past releases to the environment. The Order is effective upon my signature.

Sincerely yours,

Patrick M Tobin

Patrick M. Tobin, Director
Waste Management Division

Enclosure

cc: Brigadier General C.L. Vermilyea, Commanding General
MCAS Cherry Point
R.D. Nelson, Natural Resources and Environmental Affairs
MCAS Cherry Point
Robert Warren, Commandant of the Marine Corps
Headquarters Marine Corps
Nina Johnson, Naval Facilities Engineering Command
Atlantic Division
Christopher H. Grundler, EPA Office of Waste Programs Enforcement
Federal Facilities Hazardous Waste Compliance Office
Stephen Heare, EPA Office of Waste Programs Enforcement
RCRA Enforcement Division
Robert Small, EPA Office of Waste Programs Enforcement
RCRA Enforcement Division
Lee C. Herwig, Jr., EPA Office of Federal Activities
Federal Facilities Compliance Staff
Jerry Rhodes, North Carolina Department of Environment, Health, and Natural Resources

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV

IN THE MATTER OF:	ADMINISTRATIVE ORDER ON CONSENT
Department of the Navy Marine Corps Air Station Cherry Point, North Carolina	U.S. Docket No.: 89-13-R
Respondent	Proceedings under Section 3008(h) of the Resource Conservation and Recovery Act as amended, 42 U.S.C. Section 6928(h)
EPA ID No: NC1 170 027 261	

I. JURISDICTION

This Administrative Order on Consent (hereafter "Consent Order") is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency, Region IV, (hereafter "EPA") by Section 3008(h) of the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act of 1976 (hereafter "RCRA"), as amended, 42 U.S.C. Section 6928(h). The authority vested in the the Administrator has been delegated to the EPA Regional Administrator by Delegation Nos. 8-31 and 8-32 dated April 16, 1985, and further delegated by the Regional Administrator for Region IV to the Director of the Waste Management Division of the EPA, Region IV.

This Consent Order is issued to the Department of the Navy (hereafter "Respondent") Owner/Operator of the Marine Corps Air Station (hereafter "MCAS") located in Cherry Point, North Carolina (hereafter "Facility"). It is based upon the administrative record compiled by EPA and incorporated herein by reference. The record is available for review by Respondent and the public at EPA's office at:

345 Courtland Street, N.E.
Atlanta, Georgia 30365

Executive Order 12088 was promulgated to insure Federal compliance with applicable pollution control standards. The Office of Management and Budget and the Department of Justice will take cognizance of this Consent Order pursuant to their respective duties to assure compliance with the environmental laws under Executive Order 12088 and RCRA.

Pursuant to Section 6001 of RCRA, the Respondent, a department of the executive branch of the Federal government, is a generator and an owner or operator of a hazardous waste management facility and is subject to and must comply with both Federal and the State of North Carolina's

requirements, including regulations and permit conditions pertaining to the management of hazardous waste in the same manner and to the same extent as any person [as defined in Section 1004(15) of RCRA] is subject to such requirements.

Section 7002 of RCRA provides for citizens suits against any person (including the United States) who is alleged to be in violation of any permit, standard, regulations, condition, requirements, prohibition or final order of RCRA. In addition, any person as defined in Section 1004(15) of RCRA , including any individual that may be responsible for the hazardous waste management activities at the facility, who has violated or is violating any requirement of Subtitle C of RCRA or who knowingly violates any material condition or requirement of a RCRA permit or interim status regulations or standards maybe subject to administrative, civil and/or criminal sanctions under Section 3008.

II. PARTIES BOUND

1. This Consent Order shall apply to and be binding upon Respondent and its officers, employees, agents, successors and assigns.

2. No change in ownership status relating to the Facility will in any way alter Respondent's responsibility under this Consent Order.

3. Respondent shall provide a copy of this Consent Order to all contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Consent Order within one (1) week of the effective date of this Consent Order or date of such retention. The Respondent shall write all contracts or amendments to previously let contracts, which are used to conduct or monitor any portion of the work performed pursuant to this Consent Order, so that performance of such contracts shall comply with the terms of this Consent Order.

4. Respondent shall give notice of this Consent Order to any successor in interest prior to transfer of ownership or operation of the Facility and shall notify EPA within ninety (90) days prior to such transfer.

III. STATEMENT OF PURPOSE

In entering into this Consent Order,the mutual objectives of EPA and Respondent are : (1) to perform Interim Measures (IM) to relieve threats to human health or the environment; (2) to perform a RCRA Facility Investigation (RFI) to determine fully the nature and extent of any release of hazardous waste and hazardous constituents at or from the hazardous waste management facility in Cherry Point, NC; and (3) to perform a Corrective Measures Study (CMS) to identify and evaluate alternatives for the corrective action necessary to prevent or mitigate any migration or releases of hazardous wastes or hazardous constituents at or from the Facility.

The Facility has RCRA Interim Status and is subject to RCRA corrective action requirements. The Facility may, at some future time, be listed on the CERCLA National Priorities List (NPL) and be required by statute to enter an Interagency Agreement under CERCLA Section 120 for corrective action. EPA intends that the corrective action taken under RCRA authority will incorporate all requirements that would be mandated if the action were taken under CERCLA and the National Contingency Plan so as to avoid unnecessary duplication of work in the future. All documents submitted pursuant to this Consent Order will, upon request, be reviewed for compliance with both RCRA and CERCLA. Approval of the RFI Workplan, RFI Final Report, and the CMS Final Report by the Director of the Waste Management Division, an official having cognizance over both the RCRA and CERCLA programs, will indicate compliance or non-compliance with both statutes. Nothing in this Consent Order shall be interpreted as obligating the Respondent to comply with CERCLA. EPA reserves all rights and authorities under CERCLA in the event that corrective action cannot by accomplished under RCRA.

IV. FINDINGS OF FACT

1. The Respondent is a Department of the Executive Branch of the Federal Government and is subject to the requirements of Section 6001 of RCRA, 42 U.S.C. Section 6961.

2. Respondent is a generator and an owner and/or operator of a hazardous waste management facility located in Craven County in Cherry Point, North Carolina. Respondent engages in the generation, treatment, storage, and disposal of hazardous wastes at the facility and is subject to interim status requirements as those terms are defined in Section 1004(5) of RCRA, 42 U.S.C. Section 6903(5) and 40 CFR Part 265, and the State requirements of 40 CFR Part 265, Codified at 10 North Carolina Administrative Code (NCAC) 10.F. 0033.

3. Respondent owned and/or operated a hazardous waste management facility on and after November 19, 1980, the applicable date which renders facilities subject to the interim status requirements or the requirement to have permit under Sections 3004 and 3005 of RCRA, 42 U.S.C. Sections 6924, 6925.

4. Pursuant to Section 3010 of RCRA, 42 U.S.C. Section 6930, Respondent notified EPA of its hazardous waste activity. In its Part A Permit application dated November 18, 1980, Respondent identified itself as a generator of hazardous waste and/or an owner/operator of a treatment, storage, and/or disposal facility. The application was modified and submitted on May 28, 1981. In May 1984, the North Carolina Department of Human Resources (NCDHR) requested the Part B Permit Application.

Respondent submitted the first version of the Part B Application on November 4, 1984. Since that time, the Facility has submitted numerous revisions and addendums to this document.

5. On its Notification of Hazardous Waste, dated July 29, 1980, and on its revised Part A Permit Application, dated February 26, 1988, Respondent identified itself as handling the following hazardous wastes at the facility:

a. Hazardous waste exhibiting the characteristic of ignitability (D001), corrosivity (D002), reactivity (D003), and EP toxicity (D004 - D017) which are identified at 40 CFR Section 261.20 - Section 261.24 and 10 NCAC 10. F. 0029.

b. Hazardous wastes from non-specific sources identified at 40 CFR Section 261.31 and 10 NCAC 10. F. 0029; (F001 - F012, F014, F015, F017 - F019, F027).

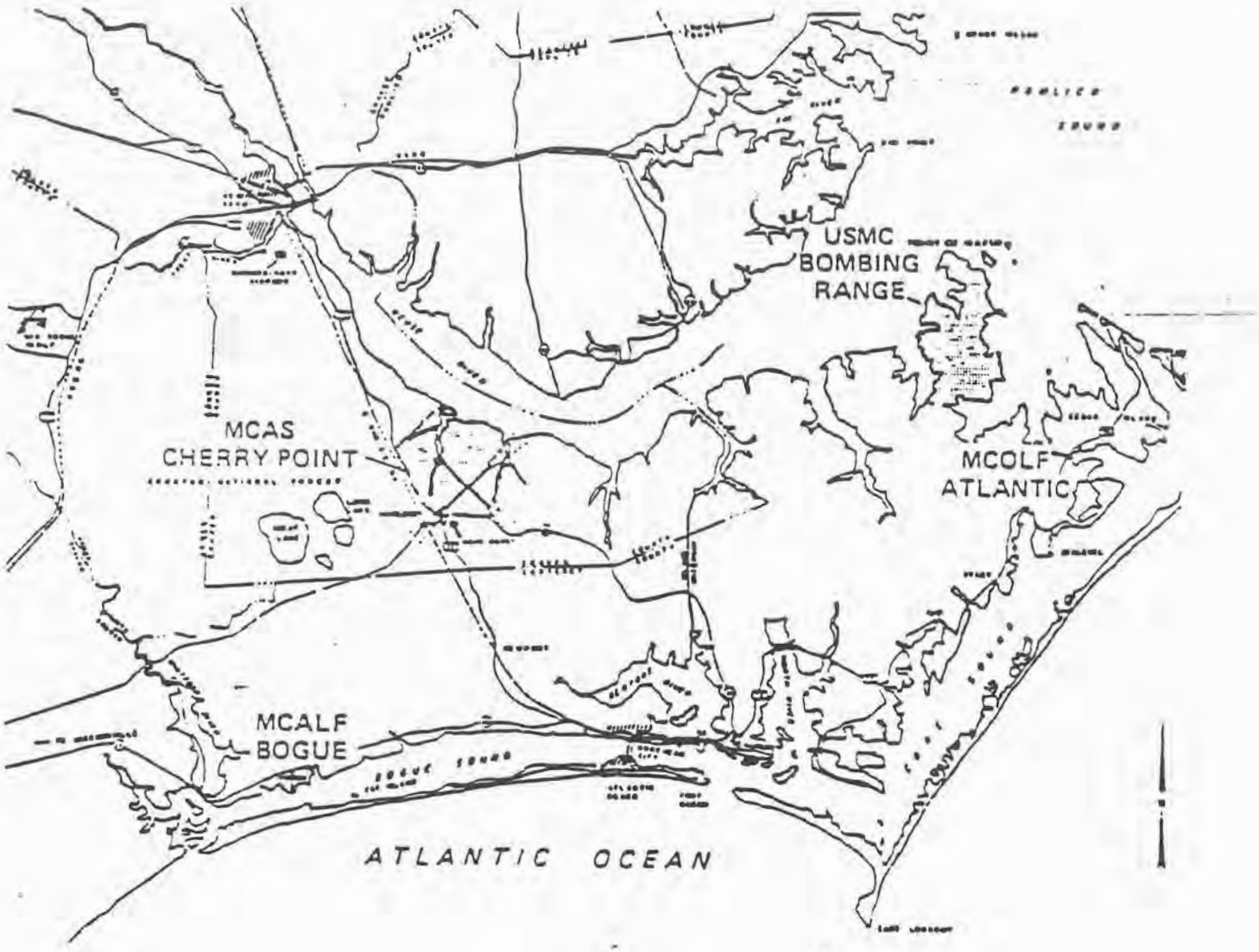
c. Hazardous wastes from specific sources identified at 40 CFR Section 261.32 and 10 NCAC 10.F. 0029; (K022, K071).

d. Commercial chemical products, manufacturing chemical intermediates, off-specification commercial chemical products, or manufacturing chemical intermediates identified at 40 CFR Section 261.33(e) and 10 NCAC 10.F. 0029; (P001 - P018, P020 - P024, P026 - P031, P033, P034, P036 - P051, P054, P056 - P060, P062 - P078, P081, P082, P084, P085, P087 - P089, P092 - P099, P101 - P116, P118 - P123).

e. Commerical chemical products, manufacturing chemical intermediates, off-specification commercial chemical products, or manufacturing chemical intermediates identified at 40 CFR Section 261.33(f) and 10 NCAC 10.F. 0029; (U001 - U039, U041 - U053, U055 - U064, U066 - U099, U101 - U103, U105 - U174, U176 - U194, U196, U197, U200 - U223, U225 - U228, U230 - U240, U242 - U249).

6. Respondent's facility is a Marine Corps Air Station (MCAS) covering approximately 11,704 acres and is located in Craven County, Cherry Point, North Carolina (see figure 1). MCAS Cherry Point maintains and operates support facilities and provides services and materials for the tenants of the station. Occupants include the Second Marine Aircraft Wing (2d MAW), the Naval Aviation Depot (NADEP), the Combat Service Support Detachment 21 Second Force Service Support Group (2d FSSG), the Naval Hospital, the Dental Clinic, the Naval Air Maintenance Training Group Detachment, and the Defense Reutilization and Marketing Office (DRMO).

Respondent is currently conducting an Installation Restoration (IR) Program at the Facility. The objective of the IR is to identify, assess, and control enivronmental contamination from historic hazardous waste operations. The first phase of the IR program identified suspect sites in the Navy Assessment and Control of Installation Pollutants (NACIP) program - Initial Assessment Study (IAS) completed in 1983. The following ongoing phase consists of investigative activities which resulted in a Remedial Investigation (RI) Interim report in October of 1988. In June 1988, EPA contractor A.T. Kearney, Inc. submitted an Interim RCRA Facility Assessment Report (RFA) of the Respondent's facility. In the report, 114 Solid Waste Management Units (SWMUs) and two other areas of concern (AOCs) are identified.



VICINITY MAP

LEGEND

- MILITARY INSTALLATION
- TOWN
- U.S. HIGHWAY
- STATE HIGHWAY
- RAILROAD
- COUNTY LINE

0 7 14
APPROXIMATE SCALE - MILES

0 10 20
APPROXIMATE SCALE - KILOMETERS

Figure 1 Location of MCAS Cherry Point

The following solid and hazardous waste management units or potential contamination sources have suspected or documented releases. Any other SWMUs or RCRA regulated units not covered in this Consent Order will be addressed at a later date through the permitting process, subsequent modification to this Consent Order as outlined in Section XX, or through additional compliance orders and/or agreements.

The following historical and visual descriptions were constructed from the information written in the RFA report, IAS report, RI Interim report,and the Closure Plan for the NADEP Former Drum Storage Area (RFA Unit N-22):

a. Crash Crew Burn Pit (RFA Unit F-13) - The Crash Crew Burn Pit began operations in 1985 to train crash fire personnel and incinerate waste JP-5 jet fuel. The pit consists of a concrete pad 100 feet in diameter with a five-inch curb. Runoff flows to the Crash Crew Burn Pit Oil/Water Separator. The concrete pavement was discolored and cracked with black soot surrounding the area. It is EPA's determination that potential release to soils, groundwater, and surface water is high due to observed runoff in early 1988 and the proximity of drainage ditches flowing to Hancock Creek.

b. Crash Crew Burn Pit Oil/Water Separator (RFA Unit F-14) - The Crash Crew Burn Pit Oil/Water Separator has been in operation since 1985 to receive runoff of residual JP-5 jet fuel and aircraft fire fighting foam from the Crash Crew Burn Pit. The Separator is constructed of steel and concrete and is five feet wide, ten feet long and eight feet deep. The water is discharged through a NPDES permitted outfall to Jack's Branch, a tributary to Hancock Creek. The oil in the Separator is skimmed off and sent to DRMO Hazardous Waste Storage Facility for recycling or disposal by a licensed contractor. In early 1988, the drainage ditch that receives the discharged water was heavily stained and surrounded with dead vegetation, as were the soils in the vicinity of the separator.

c. VMGR 252 Accumulation Area (RFA Unit F-22) - The VMGR 252 Accumulation Area is a less-than-90-day container storage area for waste hydraulic fluid, waste JP-5 fuel, oil, rags, and contaminated solvents generated by flight line operations that began activity in 1986. It is constructed of a 40 ft. x 10 ft. concrete pad with an 8-inch curb and is covered by a roof. A release valve to remove accumulated liquid is located below the curbing and discharges directly onto soil where staining was observed in early 1988.

d. Crash Crew Accumulation Area (RFA Unit F-38) - This current container accumulation area is located south of Runway 28 and began operations in 1983 for the storage of waste petroleum, oils, and lubricants (POLS) and hydraulic fluid. It consists of a 100 ft.x 15 ft. concrete pad with a 6-inch curb. In early 1988, staining of soils was observed where a release valve discharges accumulated liquid directly onto the ground.

e. MAG 14 Accumulation Area (RFA Unit F-42) -The startup activity began in 1983 in this container storage area northeast of Runway 28. As of 1986 hazardous waste is no longer stored here. It consisted of

an asphalt pad divided into two compartments, one 30 ft. x 20 ft. and the other 15 ft. x 5 ft. Empty hydraulic fluid cans and waste JP-5 fuel stored in drums are elevated by wooden pallets. There was no permanant containment curb. In early 1988, adjacent to the asphalt pad dead vegetation and staining of the soil was observed with rusted cans lying on the ground.

f. NADEP Former Drum Storage Area (RFA Unit N-22) - This area is a former drum storage area that was in operation from 1979 to approximately 1986 for the storage of hazardous wastes generated during manufacturing operations in the Naval Aviation Depot (NADEP). Prior to 1984, the area was used to store spent organic solvents, strippers, corrosion preventative compounds, cyanide wastes and sandblast residue contaminated with heavy metals. After 1984 the area was used exclusively to store sandblast residue and wastes of unknown origin. All of the unknowns were identified, removed and properly disposed of by June 13, 1986. The storage area is no longer active. A closure plan was submitted to NCDHR in October, 1987, with soil sample analyses indicating metal and organic constituent contamination from past unit operations. This closure plan was approved by NCDHR in July, 1988 and is being implemented.

g. H & HS 28 Former Accumulation Area (RFA Unit S-6) This less-than-90-day waste container and old battery storage area, formerly called the 2nd LADD Accumulation Area, was active from 1987 to 1988. It handled spent oil, battery acid, and batteries generated by the 2nd LADD Squadron. Currently the site is used a storage area for barbed wire. It consists of a 10 ft. x 10 ft. concrete pad with a three-inch high curb. In early 1988, staining was observed where accumulated liquid was discharged through a release valve directly onto soil.

h. MASS 1 Wash Rack and Oil/Water Separator (RFA Unit S-10) This unit is a vehicle wash rack and associated oil/water separator for the Marine Air Support Squadron (MASS 1) that has been active from 1984 to present. The wash rack is a concrete pad approximately 30 ft. long x 20 ft. wide, with the associated separator measuring 8 ft. long x 4 ft. wide x 8 ft. deep. Wash water that drains to the separator contains non-phosphate biodegradable soap and residual petroleum products from vehicles. Water from the separator goes to the Sewage Treatment Plant (RFA Unit C-5) and the oil transferred to the DRMO Hazardous Waste Storage Facility. At the time of the RFA inspection, the liquid level in the oil/water separator was below the influent/effluent pipes. It is EPA's position that this could indicate a release to the environment.

i. MWCS 28 Accumulation Area (RFA Unit S-11) This is a less-than-90-day container storage area for hazardous and nonhazardous wastes generated by MWCS 28, including aerosol paint cans, waste oils and solvents, used antifreeze, diesel contaminated soil, used batteries, and used battery acid. The concrete storage pad is 50 ft. long x 10 ft. wide with a six-inch curb and is covered by a metal roof. A release valve removes accumulated liquid from the sump and discharges directly onto the ground. In early 1988, stains were observed on the soil adjacent to the release valve and pad with drums and unopened paint cans on the ground outside the area.

j. Fuel Line Leak Site (RFA Unit S-A) On May 5, 1986 facility personnel detected a pencil-size hole leak in a JP-5 jet fuel underground transfer line. Approximately 600 gallons of fuel leaked from the pipe and flowed southward to an unnamed tributary to the Neuse River. Approximately 200 gallons were recovered by remediation with a vacuum truck. Several hundred gallons of the fuel were not recovered, of which more than 10 gallons were discharged into the stream. NC Division of Environmental Management personnel inspected the site and concurred with cleanup action taken.

k. DRMO Hazardous Waste Storage Facility (RFA Unit C-1) This unit is a RCRA-regulated hazardous waste drum storage area that has been in operation from 1961 to present. It receives wastes from all manufacturing, maintenance, and support operations occurring on the base and in the NADEP. Base operations generate spent batteries, waste POL, and contaminated sorbents. A list of chemicals used and wastes generated by NADEP is as follows:

NADEP Generated Waste	Hazard	EPA Hazardous Waste Number
Paint Stripping Wastes	Toxic	F001, F004
Metal Cleaning Wastes	Toxic, Ignitable	F005
Degreasing Wastes	Toxic	F001
Spent Electroplating Solutions Containing Cyanide	Reactive, Toxic	F007, F008
Metal Plating Wastes	Corrosive	D002
Plating and Battery Shop Wastes Containing Sulfuric and Nitric Acids	Corrosive	D002

The concrete storage pad is six inches thick and covers approximately one acre. The older section is a right triangular shaped pad, approximately 205 ft x 235 ft x 286 ft. The new section is located in the southwest corner of the pad and is 3600 square feet in area. The pad slopes to a sump from the north and west sections of the pad to a drain and a sump on the south side of the pad. The east section drains to a sump where the liquid is sampled prior to discharging to an oil/water separator and on to Schoolhouse Branch, a tributary to Slocum Creek. Waste from the DRMO Hazardous Waste Storage Facility is transported by private contractors to licensed disposal facilities. The Part B Permit Application is currently under review by the EPA and NCDHR.

l. Facilities Maintenance Hazardous Waste Storage Facility (RFA Unit C-2) - This unit is for the storage of PCB contaminated transformers and solvents, waste POL (petroleum, oils, and lubricants), and POL - contaminated solvents generated by the facilities maintenance operations and unservicable transformers. The storage area consists of three separate roofed concrete pads, in an area approximately 100 feet by 50 feet. Each pad is six inches thick with a three inch high curb and a sump and valve for removal of any collected liquid. If contamination is suspected the liquid is analyzed prior to discharge. This RCRA - regulated unit has been in operation since 1983 and its Part B Permit Application is currently under review by EPA and NCDHR.

m. Industrial Wastewater Treatment Plant (RFA Unit C-4) This unit treats waste generated by industrial sources such as metal plating, painting, and aircraft and vehicle maintenance, as well as collected stormwater from throughout the base. The system is composed of various tanks and basins constructed of concrete and steel designed to treat 0.65 million gallons per day (mgd) wastewater. This system serves as a pretreatment unit for wastewater ultimately discharged to the Sewage Treatment Plant. Pretreatment sludge is disposed of off-site at a commercial hazardous waste facility.

n. Sewage Treatment Plant (RFA Unit C-5) This unit treats sanitary sewage from the base and pretreated effluent from the Industrial Wastewater Treatment Plant. Components of the system are constructed of concrete or steel and are designed to treat 3.5 million gallons per day (mgd). After treatment the water is discharged to Slocum Creek through an NPDES outfall via two polishing ponds (RFA Unit C-12). Sludges from the drying beds are disposed in the current sludge application area.

o. Construction Landfill (RFA Unit C-8) This unit is a construction debris landfill that receives wastes generated from building demolition, the coal-fired steam plant, and POL spillage. Wastes include construction debris, fly and bottom ash, and POL sorbents. The landfill is constructed on approximately ten acres of native soil and has been in use since 1982. NCDHR recently approved POL-contaminated sorbent disposal provided enzymes are added to enhance microbial degradation of the organic wastes. The Construction Landfill is operated under a Solid Waste Permit issued by the State of North Carolina.

p. Former Sludge Application Area (RFA Unit C-10) In the summer of 1986, sludge originating from the Sewage Treatment Plant (RFA Unit C-5) was applied to approximately 12 acres of land for treatment by biodegradation. It was determined by the State and EPA that the sludge was inadequately treated and contained the listed wastes F002 and F006. The Facility was required by EPA to submit closure and post-closure plans for this unit in a Notice of Noncompliance issued on September 18, 1987. The unit is underlain by asbestos, which is in turn overlain by a two foot thick clay cap and fill material which serves as the media for the sludge application. Respondent submitted the closure plan for this site to the State of North Carolina in December, 1988.

q. Current Sludge Application Area (RFA Unit C-11) This unit has been active since February of 1988 for the land treatment/disposal of sludge originating from the drying beds at the Sewage Treatment Plant (RFA Unit C-5). The sludge contains organic material and constituents not digested during the sewage treatment process, including chromium, cadmium, lead, mercury, and selenium. The organic constituents degrade by biological and chemical reactions in the soil. This unit covers 20 acres and is regulated by a State of North Carolina permit.

r. Polishing Ponds #1 and #2 (RFA Unit C-12) These are two unlined surface impoundments that serve as aeration basins for wastewater from the Sewage Treatment Plant (RFA Unit C-5). Each pond measures approximately two acres by 14 feet deep and have been in operation since

1942. Water from the ponds is discharged to Slocum Creek via the NPDES permitted outfall 001. On September 18, 1987, the EPA issued a Notice of Noncompliance for disposing F002 and F006 listed waste into the polishing ponds and required the Facility to submit closure and post-closure plans for these units. Respondent submitted the closure plan for this site in December, 1988 to State of North Carolina.

s. Drainage System (RFA Unit C-13) This is a system of underground pipes and above-ground drains that transfers industrial wastewater from various parts of the base to the Industrial Wastewater Treatment Plant (RFA Unit C-4), the Sewage Treatment Plant (RFA Unit C-5), or tributaries to Slocum Creek, Hancock Creek, or the Neuse River. It has been in operation since 1942. The wastewater originates from floor drains, sumps, and stormwater drains throughout the facility. At a minimum, it contains dilute solvents, POLS, electroplating tanks overflow, sanitary sewage, and stormwater runoff.

t. Oil/Water Separators (RFA Unit C-15) This unit includes the oil/water separators used at the Facility for the separation of oil from wastewater generated during maintenance operations and storm events. The units are constructed of concrete and steel and vary in age and size. The waste is oily water containing hazardous constituents such as polynuclear aromatic hydrocarbons, detergents and metals. Sludges and oils are periodically removed and transferred to the DRMO Hazardous Waste Storage Facility (RFA Unit C-1). Clarified water is discharged to the Industrial Wastewater Treatment Plant (RFA Unit C-4), the Sewage Treatment Plant (RFA Unit C-5), Leach Fields (RFA Unit C-17), or tributaries to Slocum and Hancock Creeks.

u. Leach Fields (RFA Unit C-17) This unit consists of a subsurface drainage system that serves as a point discharge for the water layer from MWCS 28 Oil/Water Separator (RFA Unit C-15), and formerly from MACS 6 Oil/Water Separator. The units vary in size and age, some existing since the 1950s. The wastewater consists of residual petroleum constituents such as polynuclear aromatic hydrocarbons and metals in solution. The water percolates into or evaporates from the soil. Residual contaminants degrade, leach, or are attenuated in the soil.

v. PCB Transformer Spill (RFA Unit C-A) This area is the site of a one-time spill of PCB-contaminated transformer oil. On April 22, 1981, a fork-lift truck dropped a transformer onto the ground and PCB contaminated oil leaked onto the ground over an area approximately 50 ft. long by 20 ft. wide. The soil and oil was removed and disposed of according to TSCA regulations. MCAS Cherry Point records indicate the oil contained less than 50 ppm of PCB's.

w. Borrow Pit/Landfill (IAS Unit I-1) This unit is a former borrow pit and hazardous waste landfill with an estimated size of four acres. According to the IAS report, use of this unit as a landfill for disposal of hazardous wastes began in the mid-to-late 1950s. The final year of disposal could not be determined and no records were kept detailing quantity or type of waste disposal activities; however, small amounts of rubble or trash were observed at the site in April 1982. It is estimated that ten tons of hazardous wastes were disposed in this unit.

According to the RI Interim Report, concentrations of arsenic, mercury, and zinc detected in groundwater monitoring wells were below EPA MCL's. Detections of nickel appear to be representative of naturally occurring background levels. Cyanide was detected at a maxium of 0.015 mg/l.

x. Borrow Pit/Dump Site (IAS Unit I-2) This unit is a former borrow pit and hazardous waste landfill with an estimated size (from aerial photographs) of four acres. According to the IAS report, use of this unit as a landfill for disposal of hazardous wastes began in the mid-to-late 1950s. There are no records of the type and quantity of waste disposed and the final year of disposal could not be determined. In 1983, the site was described as a grassy field with five foot high pine tree seedlings. During the IAS, miscellaneous waste (scrap metal) and rubble was found on and in a tributary to Hancock Creek. It is estimated that ten tons of hazardous wastes were disposed in this unit. According to the RI Interim Report, concentrations of arsenic, mercury, and zinc detected in groundwater monitoring wells were below EPA MCL's. Detections of nickel appear to be representative of naturally occurring background levels. Cyanide was detected at a maximun of 0.008 mg/l.

y. EOD Pit/Landfill (IAS Unit I-3) This unit was an operating disposal site for unserviceable ammunition (20 mm shells) and napalm. Presently, only conventional munitions are burned/exploded on site. The size of the area is 7.7 acres and has been in operation since 1972. On November 8, 1988 Respondent submitted a revised Part B Application for this unit for disposal of conventional munitions.

z. Storage Tank (IAS Unit I-5) This unit is a 100,000 gallon storage tank (No. 1771) for petroleum, oil and lubricants. Activity began in 1955 and continued until the early 1980's. The tank is constructed of welded steel plates. Wastes stored in the tank included petroleum products, PCB-contaminated oils, chlorinated solvents, phenolics, sodium cyanide, and acids generated from manufacturing and maintenance operations occuring at the Facility. The contaminated wastewater was removed and discharged to Slocum Creek. The POL was periodically removed and used in the fire training exercises or transported off-site for use as a fuel supplement. An estimated 135 cubic yards of PCB-contaminated soil remains around the tank. According to the IAS report, the soil surrounding the tank is stained with oily residue. An estimated 2,000 gallons of wastes have spilled in the area. A closure plan for the tank and appurtenances was approved by NCDHS in September, 1988, and is being implemented. The RI Interim Report recommended the other portions of the site (transformer station, old steam plant site, and surrounding area) for further investigation.

aa. Fly Ash Ponds (IAS Unit I-6) These unlined surface impoundments are former disposal areas for fly ash and cinders from the power plant. The ponds are now used for disposal of lime/alum sludge from the Potable Water Treatment Plant. The units cover approximately 2.5 acres. The units were used for fly ash and cinder disposal from the 1940s until 1970. The units have been used for sludge disposal since 1980 and were in operation as of 1983. According to the IAS study, petroleum wastes generated in the NADEP were also placed in the units. According to the RI Interim Report, the only constituent that exceeded relevant standards and criteria was phenolics.

bb. Old Incinerator and Adjacent Area (IAS Unit I-7) This unit is an incinerator and open burning ground covering approximately five acres. The unit was in operation from the 1940s until 1955. Waste POL, NADEP wastes and other station wastes such as municipal refuse were burned either in the incinerator or on the ground adjacent to the unit. No records were kept as to the quantity or types of wastes disposed at the unit.

cc. Old Sanitary Landfill (IAS Unit I-10) This unit is the main landfill for the Facility. The unlined unit is approximately 40 acres in size and has been used to dispose of liquid wastes and sludges from industrial operations at MCAS. Hazardous liquids and POL have been landspread, burned, or buried in pits of the landfill. From 1955 until the late 1970s, these operations occurred on the south side of Turkey Gut, where waste POL and solvents were also burned in pits for crash crew training purposes. From the 1970s until the present, the filling operations occurred on the north side of Turkey Gut. Groundwater monitoring well analyses indicate contamination by metal and organic constituents. In March 1982, seepage from the area of the unit entered the adjacent stream (Turkey Gut). The RI Interim Report recommended this site for further investigation to define the extent of contamination.

dd. Crash Crew Training Area (IAS Unit I-12) This unit is an area used for training crash fire and rescue personnel. Waste POL and solvents were burned in one of two circular bermed areas on Runway 28. The unit was in use from the early to mid-1960s until 1985. The new Crash Crew Burn Pit (RFA Unit F-13) is constructed on the site of this unit. The approximate diameter of the bermed area is 50 feet. Reportedly, little residue remained after fuel burning; however, spillage and leakage from the pits is evident from observations of stained and oily soil in the drainage ditch and adjacent to the runway. An estimated 2,000 gallons of waste POL and solvents have migrated south of the area onto the soil and into a drainage ditch which leads to Hancock Creek.

ee. Area and Ditch Behind Naval Aviation Depot (NADEP) - (IAS Unit I-15) This is a ditch and area used for disposal of wastes from the NADEP. From the 1940s to 1975, wastes generated in the NADEP were washed down floor drains and discharged to the ditch which flows to Schoolhouse Branch (a tributary of Slocum Creek). Solid materials were also disposed in the ditch. The wastes discharged through floor drains included POL, organic solvents, cyanides, and metals. The exact amount of wastes is unknown but, based on current flow to the Industrial Wastewater Treatment Plant (RFA Unit C-4), quantities may have been between 200,000 and 250,000 gallons per day. According to the RI Interim Report, the primary constituent exceeding relevant criteria in groundwater is lead.

ff. Landfill at Sandy Branch (IAS Unit I-16) This site is a former borrow pit that was used as a disposal site for potassium cyanide, waste oils, and other wastes such as refuse. The site is approximately 11 acres. According to the IAS report, approximately 20,000 gallons of waste oil, one or more 55-gallon drums of sodium cyanide, and unknown quantities of refuse were disposed at the site. The site was in operation from 1946

until 1948. However, aerial photographs indicate dumping along the perimeter of the site occurred after 1949. The RI Interim Report recommended this site for further investigation to define extent of contamination.

gg. Defense Property Disposal Office Storage Area (IAS Unit I-17) This unit is an outside storage area covering approximately one acre. Material stored in the area included POL, spent photographic fluid, DDT, and transformers containing PCBs. Reportedly, transformer oil was drained into the ditch south of the area. The transformer drainage occurred from 1961 until 1968. In 1983, the area was used for storage of DDT. Reportedly, POL was sprayed on the area to control dust. The drainage ditch flows to Schoolhouse Branch which discharges to Slocum Creek. The RI Interim Report recommended this site for further investigation to define the extent of contamination.

hh. Borrow Pit/Landfill (IAS Unit I-19) This unit is a former landfill covering approximately nine acres. According to aerial photographs this area was originally disturbed in 1949 with most filling activity occurring through the 1960s. Wastes disposed in the area include fly ash from the steam plant, wastes from the NADEP and asbestos-lined piping material. According to the RI Interim Report, the only constituent that exceeded relevant criteria was n-nitrosodiphenylamine. It was detected in the first of two rounds of sampling.

ii. Borrow Pit/Landfill (IAS Unit I-21) This unit is a former borrow pit and landfill used for the disposal of wastes from the NADEP ash from the Steam Plant, and asbestos from pipe insulation. The size of the area is approximately 30 acres. Based on aerial photography, the area appears to be disturbed from 1949, and used extensively through the early 1960s. Reportedly, oily material seeped into an adjacent road ditch and a fire burned on the area of the landfill for approximately one month. The RI Interim Report recommended this site for continued groundwater monitoring.

The Facility has several underground storage tanks (Tank Farms A, B, and D) which are solid waste management units regulated under Subtitle C of RCRA. These units are not included in this Consent Order because releases of oil and hazardous substances are being addressed under N.C.G.S. Section 143-215.75 et seq (the Oil Pollution and Hazardous Substance Control Act). Concurrent with the submittal of Task I of the RFI Scope of Work in Attachment B, Respondent shall also submit to EPA an account of each underground storage tank (UST) and an outline of any work conducted to date and/or any work planned for that tank in the future. Thereafter, Respondent shall provide EPA with an annual status report on these units. EPA reserves its right to take corrective action under RCRA Subtitle C to address these units at any time.

7. Hydrogeologic Conditions - According to a recent report by the U.S. Geological Survey (USGS), the Facility lies in the Atlantic Coastal Plain physiographic province characterized by a seaward-thickening wedge of Cretaceous and Holocene age sediments resting on a basement complex of igneous and metamorphic rocks (figure 2). Beneath the Respondent's Facility, the sediments are approximately 2500 feet thick and consist of unconsolidated to partly consolidated beds of sand, silt, clay, shell and limestone. These deposits make up a number of aquifers and confining units that are saturated with fresh water from the water table at or near the surface to about 500 feet below land surface, with salt water saturating the deposits at greater depths. MCAS is underlain by four freshwater bearing aquifers, the deepest aquifer supplying the source of water for the Facility (figure 3). A lithologic description of these aquifers, in order of increasing depth with age, is as follows:

a. Surficial aquifer: Composed of undifferentiated sands and silty sands of post-Pliocene age. In some areas of the facility, the confining layer separating this aquifer from the underlying Yorktown aquifer is missing and the two function as a single hydrologic unit.

b. Yorktown aquifer: The sands of the Pliocene Yorktown formation comprise this aquifer, with the clay and silty clay beds of this unit combined with the upper part of the underlying Pungo River Formation forming the confining unit.

c. Pungo River aquifer: Consists of phosphatic sands in the lower part of this Miocene age formation. The underlying confining unit is composed of the silty clay beds of the lower Pungo River and upper River Bend formations.

d. Castle Hayne aquifer: This water supply aquifer for the Air Station is composed of the sand, sandy limestone, and cast and mold molluskan limestone beds of the River Bend and the Castel Hayne Formations.

The estimated transmissivity of the aquifers is shown in the following table:

Hydrologic Unit	Transmissivity (sq.ft./day)
Surficial and Yorktown aquifers combined	800
Pungo River aquifer	500
Castle Hayne aquifer	35,000

Wells that tap the Castle Hayne aquifer range in depth from about 195 to 330 feet below land surface. Many of the wells are located near landfill sites that have been used to dispose of considerable amounts of hazardous waste generated by the Facility. These substances have contaminated groundwater in the surficial and Yorktown aquifers beneath and adjacent to the landfills. According to the U.S. Geological Survey

Report the thickness of the confining units varies over the area, and appears to be discontinuous over the southern part of the Facility. Although all of the confining units are not interpreted to be missing at any one place, this discontinuity affords the best natural hydraulic connection between the water supply in the Castle Hayne aquifer and the land surface. Evidence of this natural hydraulic connection at MCAS is in the southern portion of the Facility where an initial round of sampling detected benzene contamination in an area where the confining clay units are thin or discontinuous. All benzene concentrations were below 5 micrograms per liter maxium contaminant level set by EPA for drinking water. Resampling for verification of the contamination is scheduled through the U.S. Geological Survey.

Groundwater saturates the sedimentary deposits from the top of the basement rocks to the top of the water table. The groundwater that occurs between the land surface and about 500 feet below the land surface is freshwater containing chloride concentrations of less than 250 mg/L. About 20 percent (11 inches) of the average annual precipitation is estimated to infiltrate the water table and combine with the groundwater system. Recharge areas occur at interstream areas, and discharge occurs at streams and rivers bounding the facility. Groundwater in the zone of saturation occurs under confined and unconfined conditions. Unconfined conditions exist in the shallow aquifers, such as the surficial and the upper part of the Yorktown aquifers where there are no confining units between the land surface and the water table. Groundwater occurs under confined conditions in the deeper aquifers.

The average altitude of the water table in the area of the facility is estimated at 15 feet above sea level and occurs in the Surficial and Yorktown aquifers. Groundwater moves through these units in response to differences in hydraulic head, and is generally in direction of the stream and creeks. Groundwater also has the potential to move vertically downward through the Pungo River aquifer into the Castle Hayne aquifer when the supply wells are pumping. This is evident due to the contamination found in wells tapping the deeper aquifer on an initial round of sampling. Resampling for verification of the contamination is scheduled through the U.S. Geological Survey.

The Castle Hayne aquifer provides water for domestic, municipal and industrial users throughout eastern North Carolina. MCAS Cherry Point has been pumping water from supply wells from 1941 to present. Large groundwater withdrawals have lowered the potentiometric surface 5 to 10 feet regionally and as much as 30 feet in some of the active production wells. The results of the groundwater withdrawal have altered the pre-pumping groundwater direction from southwest to northeast and diverted the flow toward the pumping supply wells. The present hydraulic gradients create a potential for the downward movement of contaminated groundwater from the surficial aquifer to the Castle Hayne aquifer and the upward movement of some saltwater from the deep part of the Castle Hayne aquifer.

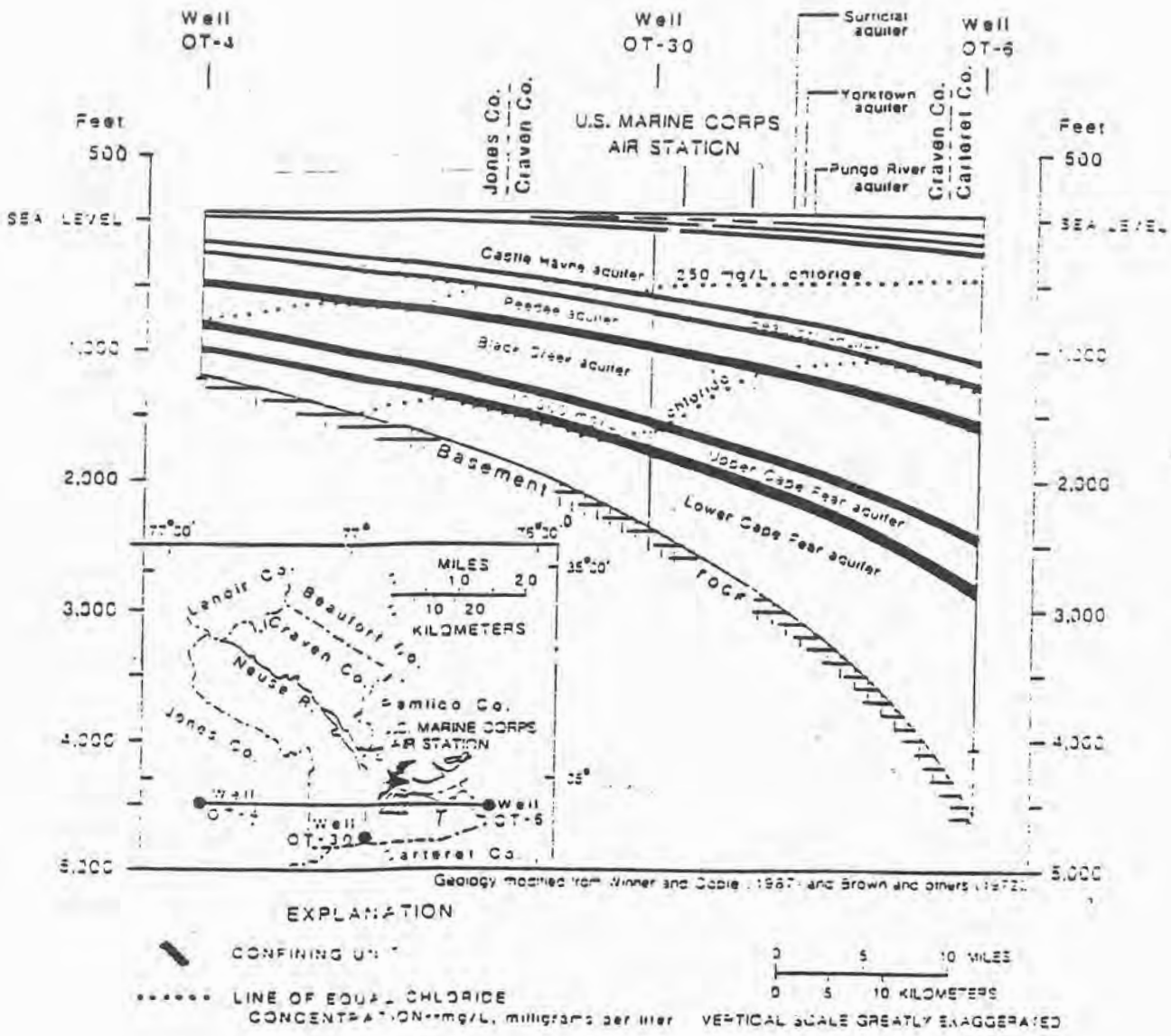


Figure 2 --Hydrogeologic section of aquifers and confining units in parts of Jones, Craven, and Carteret Counties, North Carolina.

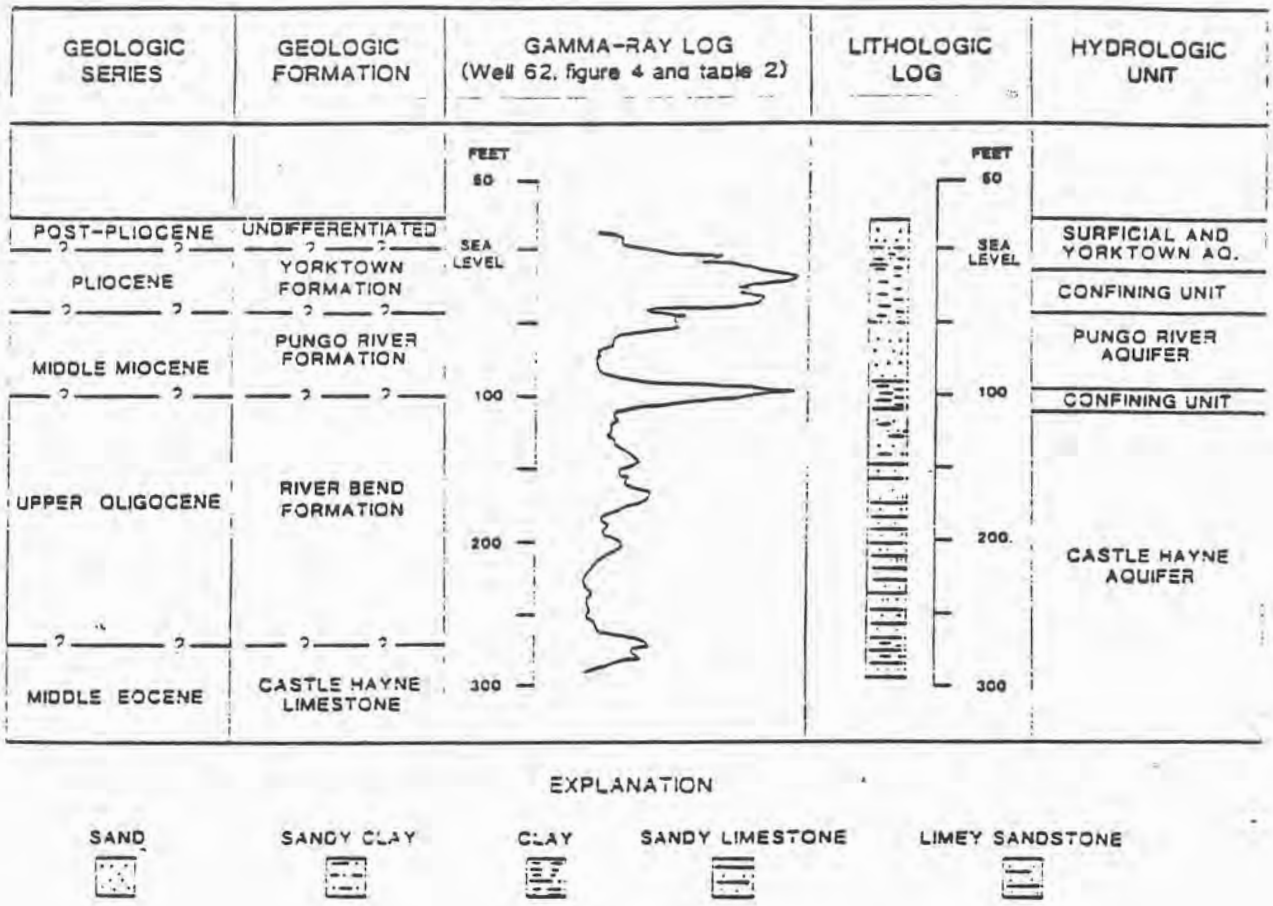


Figure 3.--Typical relation between geologic and hydrologic units saturated with freshwater, U.S. Marine Corps Air Station, Cherry Point, North Carolina.

8. Documentation of Release: There is documented groundwater, surface water, and soil contamination from hazardous material and hazardous waste management activities at the Facility over the past 40 years. Sources of the contamination include disposal in unlined landfills, surface impoundments, and land treatment units, disposal through floor drains which discharge to tributaries of Slocum or Hancock Creeks, or disposal by burning at landfills or during crash crew fire fighting exercises.

There is documented groundwater contamination from the Old Sanitary Landfill (IAS Unit I-10). Hazardous constituents detected in the groundwater monitoring well samples are 1,1-dichloroethane, methylene chloride, trichloroethane, dichloroethane, chloroform, mercury, lead, and arsenic.

There is documented surface water contamination in the area of the Old Incinerator and Adjacent Area (IAS Unit I-7). Hazardous constituents detected in surface water samples are 1,1,1-trichloroethane, Chloroform, Dichlorobromomethane, Chlorodibromomethane, Arsenic, Zinc, and most notably Cyanide, which was found in concentrations up to 21 micrograms per liter.

There is documented soil contamination in the area of the Storage Tank for Waste POL (IAS Unit I-5). In 1985, soil samples indicated levels of 7 to 10 mg/kg polychlorinated biphenyls (PCBs). In late 1985 and January 1986, subsequent soil sampling indicated concentrations ranging from less than 1 mg/kg to 40 mg/kg. One sample has a concentration of 135 mg/kg PCBs. This soil has been removed and was stockpiled in the PCB-contaminated Soil Pile (RFA Unit C-3) prior to disposal. Stockpiled PCB-contaminated soil was removed in accordance with TCSA regulations in March 1989.

On July 25, 1982, approximately 400 gallons of JP-5 jet fuel spilled in the area of Tank Farm A (IAS Unit I-13) due to an equipment malfunction. On August 9 of the same year, 100 gallons of the same material spilled due to a broken fuel line. According to the spill report, the Facility reports the fuel was cleaned up satisfactorily. On December 6, 1982, over 12,500 gallons of JP-5 jet fuel spilled, due to negligence, from Tank Farm A (IAS Unit I-13) and discharged into Slocum Creek. The spill report indicates the cleanup was not satisfactory. On December 27, 1982, over 3,000 gallons of waste fuels spilled from the Fire Pit and discharged to Hancock Creek. According to the spill report, the clean-up was unsatisfactory.

Samples taken in May, 1987 by USMC Cherry Point at the Polishing Ponds (RFA Unit C-12) the Former Sludge Application Area (RFA Unit C-10), and the Old Sanitary Landfill (IAS Unit I-10), showed elevated levels of metals and Cyanides.

In a report done by the USGS on the hydrogeologic setting, water levels and the quality of water from the supply wells at the base detected benzene contamination in an initial round of samples taken from the drinking water supply aquifer. A confirmation round of sampling is scheduled. The area of highest benzene concentration occurs in wells within 0.4 miles of the Area and Ditch behind NADEP (IAS Unit I-15). Also detected was contamination in the surficial aquifer in the area of the Landfill at Sandy Branch (IAS Unit I-16), where volatile solvents and organic chemicals were discovered in concentrations between 100 and 300 ug/L, and one determination of trans - 1,2 dichloroethene at 2000 ug/L.

9. Hazardous wastes and/or hazardous waste constituents may migrate from the Facility into the environment in the following pathways:

a. The physiography of the Facility is level to slightly sloping land with elevations ranging from sea level to 30 feet above mean sea level. It is located within the drainage basin of the Neuse River and its tributaries, Slocum Creek and Hancock Creek. Possible contamination may occur through surface drainage to these three bodies of water via a system of ditches, storm sewers, and pre-existing local tributaries. Slocum Creek contains four tributaries, Sandy Branch, Schoolhouse Branch, Luke Rowes Gut, and Turkey Gut, which provide drainage basins for the developed area of the facility. Portions of the Facility are located within the 100-year flood plain of Slocum and Hancock Creeks and the Neuse River.

b. Groundwater flow in the Surficial aquifer generally follows the surface land contours and could serve as a potential pathway for contaminated migration. Discharge is to the Hancock and Slocum Creeks and the Neuse River either directly or through tributaries. Large groundwater withdrawals from the deeper Castle Hayne aquifer have altered the groundwater flow direction from southwest to northeast and diverted the flow towards the pumping supply wells. The hydraulic gradient that this creates serves as a potential pathway for downward movement of contaminated groundwater from the Surficial to the Castle Hayne aquifer.

10. The substances identified in paragraph eight above have been listed as hazardous waste or hazardous constituents by EPA based on their potential effects on human health and the environment. Included among these substances are known carcinogens, mutagens, teratogens, and toxins. The presence of these substances in the groundwater, surface water, and soils at the Facililty constitutes a basis for further investigation. Any such described effects would be based on the type of exposure, the concentration of the contaminants, and other similar factors.

11. Respondent's Facility is located in an area of about 19 square miles immediately north of the town of Havelock (population 18,000) and is bounded to north by the Neuse River estuary, the east by Hancock Creek, the south by North Carolina Highway 101, and the west by an irregular north-south line located about 0.75 mile west of Slocum Creek .

The Air Station relies solely on groundwater for water supply and at present uses between 2.5 and 4.5 million gal/day. Since it opened in 1941, the Facility's water supply has been derived from about 20 supply

wells, each equipped to pump about 200 gal/min. The number of wells being used changes from less than half to all available as water needs change or fluctuate.

The Croatan National Forest bounds the military reservation except on the north along the Neuse River. Extensive wildlife habitat is provided by the forest resource. The river and creek systems bordering the base serve as a recreational resource for military personnel and local residents. A variety of freshwater and estuarine fish habitat these streams and rivers.

12. There is documented contamination of the surficial aquifer from analyses of groundwater monitoring wells. Initial sampling of groundwater supply wells also indicate contamination in the deep aquifer. Verification of this contamination is scheduled through an additional round of sampling. Groundwater flow in the shallow unconfined aquifer generally follows the surface land contours and discharges to Hancock and Slocum Creeks and the Neuse River, either directly or through tributaries. Beneath most of the Facility, groundwater flow in the deeper Castle Hayne aquifer moves towards the pumping supply wells. When the supply wells are shut off, the aquifer exhibits natural conditions of upward flow. This aquifer provides water for domestic, municipal, and industrial users throughout eastern North Carolina.

Releases have the potential to migrate from the Facility through surface waters by the Neuse River, which flows east into Pamlico Sound and empties into the Atlantic Ocean through a number of inlets in the barrier island chain.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set out above, and after consideration of the administrative record, the Director of the Waste Management Division of EPA Region IV, has made the following conclusions of law and determinations:

1. Respondent is a Department of the Executive Branch of the Federal Government and is subject to the requirements of Section 6001 of RCRA, 42 U.S.C. 6961.

2. Respondent is the owner or operator of a facility that is operating subject to section 3005(e) of RCRA, 42 U.S.C. Section 6925(e).

3. Certain wastes and constituents thereof found at the Facility are hazardous wastes or hazardous constituents thereof as defined by 1004(5) of RCRA, 42 U.S.C. 6903(5). These are also hazardous wastes or hazardous constituents within the meaning of 3001 of RCRA, 42 U.S.C. 6921 and 40 C.F.R. Part 261.

4. There is or has been a release of hazardous wastes and/or hazardous constituents into the environment from Respondent's Facility.

5. The actions required by this Consent Order are necessary to protect human health or the environment.

VI. WORK TO BE PERFORMED

Pursuant to 3008(h) of RCRA, 42 U.S.C. 6928(h), Respondent agrees and is hereby ordered to perform the following acts in the manner and by the dates specified herein. Due to the complex nature of the Facility, site investigation and site work will be phased so that Interim Measures, RCRA Facility Investigations, and Corrective Measure Studies will be initiated/completed at some sites while they continue at others. All work undertaken pursuant to this Consent Order shall be performed in a manner consistent with, at a minimum, the EPA-approved Interim Measures Workplan, RCRA Facility Investigation Workplan, Corrective Measures Implementation Program Plan, and all other Workplans; RCRA and its implementing regulations; and applicable EPA guidance documents. As some sites have approved closure plans administered by the State of North Carolina, those plans will be appended as part of the IM or RFI Workplan for those sites. Relevant guidance may include, but is not limited to, the most current versions of the "RCRA Facility Investigation (RFI) Guidance" (EPA 530/SW-87-001), "Test Methods For Evaluating Solid Waste" (SW-846) and "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities" (EPA 530/SW-85-031).

INTERIM MEASURES (IM)

1. Within one-hundred eighty (180) calendar days of the effective date of this Consent Order, Respondent shall submit to EPA an IM Workplan for the implementation of Interim Measures. The IM Workplan and activities conducted pursuant to this Consent Order are subject to approval by EPA and shall be performed in a manner consistent with the IM Scope of Work in Attachment A of this Consent Order, which is incorporated by reference as if fully set forth herein. All aspects of Attachment A may not be appropriate to each and every site. The IM Workplan will present the specific scheme for each particular site and shall be developed in accordance with, at a minimum, RCRA, its implementing regulations, and EPA guidance documents which EPA determines to be relevant.

2. The IM Workplan shall ensure that the Interim Measures are designed to mitigate a current or potential threat(s) to human health or the environment and is consistent with and integrated into any long term solution at the Facility. The IM Workplan shall document the procedures to be used by the Respondent for the implementation of the Interim Measures; a discussion of the technical approach with design, construction, operation, monitoring and maintenance requirements; detailed schedules, cost estimate, and description of qualifications for personnel performing or directing interim measures; and reporting requirements.

RCRA FACILITY INVESTIGATION (RFI)

3. Within one-hundred eighty (180) calendar days of the effective date of this Consent Order, Respondent shall submit to EPA an RFI Workplan for a RCRA Facility Investigation ["RFI Workplan"]. The RFI Workplan is subject to approval by EPA and shall be performed in a manner consistent with the RFI Scope of Work contained in Attachment B.

Attachment B to this Consent Order is incorporated by reference as if fully set forth herein. All aspects of Attachment B may not be appropriate to each and every site. The RFI Workplan will present the specific scheme for each particular site and shall be developed in accordance with, at a minimum, RCRA, its implementing regulations, and relevant EPA guidance documents. Relevant EPA guidance may include, but is not limited to, the most recent versions of the " RCRA Facility Investigation (RFI) Guidance " (EPA 530/SW-87-001), "RCRA Groundwater Monitoring Technical Enforcement Guidance Document" (OSWER Directive 9950.1), "Endangerment Assessment Handbook".

4. The RFI Workplan shall be designed to define the presence, magnitude, extent, direction, and rate of movement of any hazardous wastes or hazardous constituents within and beyond the Facility boundary. The RFI Workplan shall document the procedures the Respondent shall use to conduct those investigations necessary to: (1) characterize the potential pathways of contaminant migration; (2) characterize the source(s) of contamination; (3) define the degree and extent of contamination; (4) identify actual or potential receptors; and (5) support the development of alternatives from which a corrective measures will be selected by EPA. A specific schedule for implementation of all activities shall be included in the RFI Workplan.

5. In accordance with the provisions of Attachment B herein, the RFI Workplan shall include: (1) a Project Management Plan; (2) a Sampling and Analysis Plan; (3) a Data Management Plan; (4) a Health and Safety Plan; and (5) a Community Relations Plan.

CORRECTIVE MEASURES STUDY (CMS)

6. Respondent shall conduct a Corrective Measures Study and submit a Draft CMS Report in accordance with the proposed schedule submitted concurrently with the RFI Final Report. The Draft CMS Report is subject to approval by EPA and shall be in accordance to the CMS Scope of Work contained in Attachment C. Attachment C to this Consent Order is incorporated by reference as if fully set forth herein. All aspects of Attachment C may not be appropriate to each and every site. The CMS Report will present the specific scheme for each particular site.

CORRECTIVE MEASURES IMPLEMENTATION (CMI)

7. Upon EPA's selection of the corrective measure(s), if Respondent has complied with the terms of this Consent Order, EPA shall provide a sixty (60) calendar day period for negotiation of an administrative order on consent (or a judicial consent decree) for implementation of the selected corrective measure(s). If agreement is not reached during this period, EPA reserves all rights to implement the corrective measure(s) or other remedial response(s) and to take any other appropriate actions under RCRA, CERCLA, or and other available legal authority.

SUBMISSIONS/AGENCY APPROVAL/ADDITIONAL WORK

8. EPA shall review any Workplan/Program Plan/Study Plan [hereafter "Plan(s)"] and inform Respondent in writing of its approval or modifications to the Plan(s). Within fifteen (15) days of approval by EPA, Respondent shall commence work and implement the tasks required by the Plan(s). In the event of any modifications, EPA shall specify in writing the deficiences and reasons for such modifications. Within forty-five (45) days of the receipt of EPA's modifications, Respondent shall amend and submit a revised Plan(s), if so required by EPA. EPA will then approve or modify the revised Plan(s), which shall be deemed incorporated into and part of this Consent Order. Within fifteen (15) days of approval, Respondent shall commence work and implement the tasks required by the modified Plan(s). Should extensive modifications affect Respondent's contractual agreements, the deadline may be extended upon mutual agreement of both parties. All work shall by performed according to the Plan submitted pursuant to the Scope(s) of Work contained in Attachments A, B, and C, in accordance with the standards, specifications and schedule stated in the Plan(s) as approved or modified by EPA.

9. Beginning with the month following the effective date of this Consent Order, Respondent shall provide EPA with progress reports for each month on the tenth day of the following month. The progress reports shall conform to requirements in relevent Scope(s) of Work contained in Attachment A, B and C.

10. Respondent shall provide draft and final Interim Measures, RCRA Facility Investigation, Corrective Measure Study reports to EPA in accordance with the schedule contained in this Consent Order and its attachments.

11. EPA will review all draft or final reports, and notify Respondent in writing of EPA's approval/disapproval or modification of the report or any part thereof. In the event of any disapproval, EPA shall specify in writing the deficiencies and reasons for such disapproval. Within forty-five (45) days of the receipt of EPA's disapproval of any report, Respondent shall amend and submit a revised report. EPA approved reports shall be deemed incorporated into and part of this Consent Order.

12. Copies of all documents, including Plan(s), preliminary and final reports, progress reports and other correspondence to be submitted pursuant to this Consent Order shall be hand delivered or sent by certified mail, return receipt requested, to the Project Coordinator designated pursuant to Section XII of this Consent Order.

13. All work performed pursuant to this Consent Order shall be under the direction and supervision of a professional engineer or geologist with expertise in hazardous waste site cleanup. Within ten (10) days of obtaining a contractor/ subcontractor, Respondent shall notify EPA in writing of the name, title, and qualifications of the engineer or geologist, and of any contractors or subcontractors and their personnel to be used in carrying out the terms of this Consent Order.

14. EPA may determine that certain tasks, including investigatory work or engineering evaluation, are necessary in addition to the tasks and deliverables included in the Plan(s) when new findings indicate that such additional work is necessary. EPA shall request in writing that Respondent perform the additional work in this situation and shall specify the basis and reasons for EPA's determination that the additional work is necessary. Within fifteen (15) days after the receipt of such request, Respondent shall have the opportunity to meet with EPA to discuss the additional work EPA has requested. Thereafter, Respondent shall perform the additional work EPA has requested according to an EPA approved Workplan. All additional work performed by Respondent under this paragraph shall be performed in a manner consistent with this Order.

VII. QUALITY ASSURANCE

Throughout all sample collections and analysis activities, Respondent shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures as specified in the approved Plans, Program plans, Studies, and Scopes of Work. In addition, Respondent shall:

1. Ensure that laboratories used by Respondent for analyses perform such analyses according to the EPA methods included in "Test Methods for Evaluating Solid Waste" (SW-846, November 1986) or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall submit all protocols to be used for analyses to EPA for approval within fifteen (15) days prior to the commencement of analyses. Respondent must recieve EPA approval before usage of any alternate protocols.

2. Ensure that laboratories used by Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. As part of such a program, and upon request by EPA, such laboratories shall perform analyses of samples provided by EPA to demonstrate the quality of the analytical data.

3. Inform the EPA Project Coordinator fifteen (15) days in advance which laboratories will be used by Respondent and ensure that EPA personnel and EPA-authorized representatives have reasonable access to the laboratories and personnel used for analyses.

VIII. PUBLIC COMMENT AND PARTICIPATION

1. Upon approval by EPA of a Corrective Measure Study Final Report, EPA shall make both the RCRA Facility Investigation Final Report (or summary of report) and the Corrective Measure Study Final Report (or summary of report) and a summary of EPA's proposed corrective measure and EPA's justification for proposing selection of that corrective measure available to the public for review and comment for at least twenty-one (21) days.

2. Following the public review and comment period, EPA shall notify Respondent of the corrective measure selected by EPA, which shall be based upon best professional judgment and consideration of all relative information. If the corrective measure recommended in the Corrective

Measure Study Final Report is not the corrective measure selected by EPA after consideration of public comments, EPA shall inform Respondent in writing of the reasons for such decision, and the Respondent shall modify the RFI/CMS based upon public comment if directed to do so by EPA.

3. The Administrative Record supporting the selection of the corrective measure will be available for public review ten (10) days after selection at an agreed upon place and time.

IX. ON-SITE AND OFF-SITE ACCESS

1. EPA and/or any EPA representatives are authorized to enter and freely move about all property at the Facility during the effective dates of this Consent Order for the purposes of, inter alia: interviewing Facility personnel and contractors; inspecting records, operating logs, and contracts related to the Facility; reviewing the progress of the Respondent in carrying out the terms of this Consent Order; conducting such tests, sampling or monitoring as EPA or its Project Coordinator deem necessary; verifying the reports and data submitted to EPA by the Respondent; using a camera, sound recording, or other documentary type equipment. Before using any such documentary type of equipment at the Facility, EPA shall request permission of Respondent's Project Coordinator who shall not unreasonably withhold such permission. The Respondent shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, that pertain to work undertaken pursuant to this Consent Order. The Respondent shall comply with all approved health and safety plans.

On-site access at the Facility will be subject to any statutory and regulatory requirements as may be necessary to protect national security. Upon EPA arrival at the Facility entrance, Respondent shall provide an escort whenever EPA requires access to restricted areas for purposes consistent with the provisions of this Consent Order. Respondent shall provide a list of such restricted areas to EPA upon effective date of this Consent Order. Should Respondent determine it will be necessary to deny access, Respondent shall provide an explanation at the time of denial and, to the extent possible, provide a recommendation for accommodating the requested access in an alternate manner. Such denial shall be subject to dispute resolution.

2. To the extent that work required by this Consent Order, or by any approved Scope(s) of Work, Plans, or Studies prepared pursuant hereto, must be done on property not owned or controlled by Respondent, Respondent shall use its best efforts to obtain site access agreements from thepresent owner(s) of such property within ten (10) days of approval of any Plan or Study for which site access is required. Best efforts as used in this paragraph shall include, at a minimum, a certified letter from Respondent to the present owner(s) of such property requesting access agreements to permit Respondent and EPA and its authorized representatives to access such property. Any such access agreement shall be incorporated by reference into this Consent Order. In the event that agreements for access are not obtained within ten (10) days of the effective date of this

Consent Order, Respondent shall notify EPA in writing within ten (10) days thereafter regarding both the efforts undertaken to obtain access and its failure to obtain such agreements. In the event EPA obtains access, Respondent shall undertake EPA approved work on such property.

3. Nothing in this section limits or otherwise affects EPA's right of access and entry pursuant to applicable law, including RCRA and CERCLA.

X. SAMPLING AND DATA/DOCUMENT AVAILABILITY

1. The Parties shall submit to each other the results of all sampling and/or tests or other data generated in accordance with the requirements of this Consent Order and its attachments.

2. Respondent shall notify EPA at least ten (10) days before engaging in any field activities, such as well drilling, installation of equipment, or sampling. At the request of EPA, Respondent shall provide or allow EPA or its authorized representative to take split samples of all samples collected by Respondent pursuant to this Consent Order. Similarly, at the request of Respondent, EPA shall allow Respondent or its authorized representatives to take split or duplicate samples of all samples collected by EPA under this Consent Order. EPA will notify Respondent at least ten (10) days before conducting any sampling under this Consent Order. Respondent or EPA may waive this ten (10) day notification period by mutual agreement of both Project Coordinators.

3. Respondent may assert a national security claim covering all or part of any information submitted to EPA pursuant to this Consent Order. Any assertion of confidentiality shall be adequately substantiated by Respondent when the assertion is made. Information determined to be confidential by EPA shall be disclosed only to the extent permitted by 40 CFR Part 2. If no such confidentiality claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to the Respondent. Respondent agrees not to assert any confidentiality claim with regard to any physical or analytical data.

XI. RECORD PRESERVATION

Respondent shall preserve, during the pendency of this Consent Order and for a minimum of at least six (6) years after its termination, all data, records and documents in its possession or in the possession of its officials, employees, agents, contractors, successors and assigns which relate in any way to this Consent Order or to hazardous waste management and/or disposal at the Facility. After six (6) years, Respondent shall make such records available to EPA for inspection or shall provide copies of any such records to EPA. Respondent shall notify EPA thirty (30) days prior to the destruction of any such records, and shall provide EPA with the opportunity to take possession of any such records.

XII. PROJECT COORDINATOR

1. Within ten (10) days of the effective date of this Consent Order, EPA and Respondent shall each designate a Project Coordinator. Respondent shall notify EPA in writing of the Project Coordinator it has selected. Each Project Coordinator shall be responsible for overseeing the implementation of this Consent Order. The EPA Project Coordinator will be EPA's designated representative at the Facility. All communications between Respondent and EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the Project Coordinators.

2. The parties agree to provide at least ten (10) days written notice prior to changing Project Coordinators. Respondent must notify EPA ten (10) days prior to the commencement of work by a newly contracted or reinstated Professional Engineer/Geologist or Contractor/Subcontractor, .

3. If EPA determines that activities in compliance or noncompliance with this Consent Order, have caused or may cause a release of hazardous waste, hazardous constituents, or a pollutant or contaminant, or a threat to the public health or to the environment, EPA may order Respondent to stop further implementation of this Consent Order for such period of time as may be needed to abate any such release or threat and/or to undertake any action which EPA determines is necessary to abate such release or threat.

4. The absence of the EPA Project Coordinator from the Facility shall not be cause for the stoppage of work.

XIII. NOTIFICATION

Unless otherwise specified, reports, correspondence, approvals, disapprovals, notices or other submissions relating to or required under this Consent Order shall be in writing and shall be sent by certified mail, return receipt requested.

1. Four (4) copies of all documents to be submitted to the U.S. EPA should be sent to:

John C. Lank, Jr., P.E.
Chief, East Unit
RCRA Waste Compliance Section
U.S. EPA, Region IV
345 Courtland St., NE
Atlanta, Georgia 30365

2. Two (2) copies of all documents to be submitted to the North Carolina Department of Human Resources should be sent to:

Jerome H. Rhodes
Head, Hazardous Waste Branch
Solid Waste Management Section
North Carolina Department of Human Resources
P.O. Box 2091
Raleigh, North Carolina 27602-2091

3. Two (2) copies of all documents to be submitted to the Respondent should be sent to:

Building 198, Stop #1
Facilities Directorate
NREA Dept., Code LN
MCAS Cherry Point, NC 28533-5000
Attn: George Radford

Commander, Atlantic Division
Naval Facilities Engineering Command
Norfolk, VA 23511-6287
Attn: N. Johnson (Code 1822)

XIV. FORCE MAJEURE AND EXCUSABLE DELAY

Due to the Respondent being a federal agency and the Facility being a federal naval facility, this section has modified to address Respondent's unique situation and is not intended to be use as precedent for future RCRA orders.

1. Respondent shall perform the requirements of this Consent Order within the time limits set forth herein, unless the performance is prevented or delayed by events which constitute a force majeure. Respondent shall have the burden of proving such a force majeure. A force majeure is defined as any event arising from causes not foreseeable and beyond the control of Respondent which could not be overcome by due diligence and which delays or prevents performance by a date required by this Consent Order. Such events include, but are not limited to: acts of God; fire; war; insurrection; civil disturbance; explosion; unanticipated breakage or accident to machinery equipment or lines of pipe despite diligent maintenance; unanticipated adverse weather conditions; unusual delay in transportation; restraint by court order or order of public authority; inability to obtain, at reasonable cost and after exercise of reasonable diligence, any necessary authorizations, approvals, permits or licenses due to action or inaction of any governmental agency or authority other than Respondent; any strike or other labor dispute; delays caused by compliance with applicable statutes or regulations governing contracting, procurement or acquisition procedures, despite the exercise of reasonable diligence; and insufficient availability of appropriated funds, if Respondent shall have made timely request for such funds as part of the budgetary process as set forth in the Section XIX of this Consent Order. Should Respondent claim insufficient funds as a Force Majeure, it shall

submit to EPA a written statement of its efforts to obtain such funds. A Force Majeure does not include increased costs of performance, changed economic circumstances, normal precipitation events, or failure to timely apply for and diligently pursue fedoral, state or local permits.

2. Respondent shall notify EPA in writing within five (5) days after it becomes aware of events which Respondent knows or should know constitute a force majeure. Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken to minimize the delay, and an estimated time table for implementation of these measures. Failure to comply with the notice provision of this section shall constitute a waiver of Respondent's right to assert a force majeure.

3. If EPA determines that the delay has been or will be caused by circumstances not foreseeable and beyond Respondent's control, which could not have been overcome by due diligence, the time for performance for that element of the relevant Plan(s) may by extended, upon EPA approval, for a period equal to the delay resulting from such circumstances. This shall by accomplished through an amendment to this Consent Order pursuant to Section XXI. Such an extension does not alter the schedule for performance or completion of other tasks required by any Plan(s) unless these are also specifically altered by amendment of the Consent Order. In the event that EPA and Respondent cannot agree that any delay or failure has been or will be caused by circumstances not reasonably foreseeable and beyond the control of Respondent, which could not have been overcome by due diligence, or if there is no agreement on the length of the extension, the dispute shall by resolved in accordance with the Dispute Resolution provisions of Section XV of this Consent Order.

XV. DISPUTE RESOLUTION

Except as specifically set forth elsewhere in this Consent Order, if a dispute arises under this Consent Order the procedures of this Section shall apply. In addition, during the pendency of any dispute, Respondent agrees that it shall continue to implement those undisputed, independent portions of this Consent Order which EPA determines can be reasonably implemented pending final resolution of the issue(s) in dispute. If EPA determines that all or part of those portions of work affected by the dispute should stop during the pendency of the dispute, Respondent shall discontinue implementing those portions of the work.

All Parties to this Consent Order shall make reasonable efforts to informally resolve disputes at the Project Manager or immediate supervisor level. If resolution cannot be achieved informally, the procedures of this Section shall be implemented to resolve a dispute.

1. Within thirty (30) days of the date of any action by EPA which leads to or generates a dispute, Respondent shall submit to EPA a written statement of dispute setting forth the nature of the dispute, the position with respect to the dispute and the information Respondent is

relying upon to support its position. If Respondent does not provide such written statement to EPA within this thirty (30) day period, Respondent shall be deemed to have agreed with the action taken by EPA which led to or generated the dispute.

2. Upon receipt of the written statement of dispute, the Parties shall engage in dispute resolution among the Project Managers and/or their immediate supervisors. The Parties shall have fourteen (14) days from the receipt by the EPA of the written statement of dispute to resolve the dispute. If agreement cannot be reached on any issue within this fourteen (14) day period any Party may, within ten (10) days of the conclusion of the fourteen (14) day dispute resolution period, submit a written notice to the Parties escalating the dispute to the Dispute Resolution Committee (DRC) for resolution. If no Party elevates the dispute to the DRC within the ten (10) day escalation period, the Parties shall be deemed to have agreed with EPA's position with respect to the dispute.

3. The DRC will serve as a forum for resolution of disputes for which agreement has not been reached pursuant to Subsections 1 and 2 of this Section. The Parties shall each designate one individual and an alternate to serve on the DRC. The individuals designated to serve on the DRC shall be employed at the policy level (Senior Executive Service or equivalent) or be delegated the authority to participate on the DRC for the purposes of dispute resolution under this Agreement. Following escalation of a dispute to the DRC as set forth in Subsection 2, the DRC shall have thirty (30) days to unanimously resolve the dispute. If the DRC is unable to unanimously resolve the dispute within this thirty (30) day period any Party may, within ten (10) days of the conclusion of the thirty (30) day dispute resolution period, submit a written notice of dispute to the Administrator of EPA for final resolution of the dispute. In the event that the dispute is not escalated to the Administrator of EPA within the designated ten (10) day escalation period, the Parties shall be deemed to have agreed with the EPA DRC representative's position with respect to the dispute.

4. Upon escalation of a dispute to the Administrator of EPA pursuant to Subsection 3, the Administrator will review and resolve such dispute as expeditiously as possible. Upon resolution, the Administrator shall provide the Respondent with a written final decision setting forth resolution of the dispute.

5. The EPA representative on the DRC is the Waste Management Division Director of EPA's Region IV. The Respondent's designated member is Headquarters Marine Corps Environmental Representative. Notice of any delegation of authority from a Party's designated representative on the DRC shall be provided to all other Parties within ten (10) days of delegation.

6. The pendency of any dispute under this Section shall not affect Respondent's responsibility for timely performance of the work required by this Consent Order, except that the time period for completion of work affected by such dispute shall be extended for a period of time not to exceed the actual time taken to resolve any good faith dispute in accordance with the procedures specified herein. All elements of the work

required by this Consent Order which are not affected by the dispute shall continue and be completed in accordance with the applicable schedule. The determination of elements of work, submittals or actions affected by the dispute shall be determined by EPA and shall not be subject to dispute under this Section.

7. Within fourteen (14) days of resolution of a dispute pursuant to the procedures specified in this Section, Respondent shall incorporate the resolution and final determination into the appropriate plan, schedule or procedures and proceed to implement this Consent Order according to the amended plan, schedule or procedures.

8. Resolution of a dispute pursuant to this Section of the Consent Order constitutes a final resolution of any dispute arising under this Consent Order. Respondent shall abide by all terms and conditions of any final resolution of dispute obtained pursuant to this Section of this Consent Order.

XVI. RESERVATION OF RIGHTS

1. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Respondent pursuant to this Consent Order and to request that Respondent perform tasks in addition to those stated in the Plan(s), Scope(s) of Work or Study(s).

2. EPA hereby reserves all of its statutory and regulatory powers, authorities, rights, remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any applicable laws and regulations and with any of the requirements of this Consent Order, including but not limited to, the right both to disapprove of work performed by the Respondent and to request that Respondent perform tasks in addition to those stated in the Workplans. This Consent Order shall not be construed as a waiver or limitation of any rights, remedies, powers and/or authorities which EPA has under RCRA, CERCLA, or any other statutory or common law enforcement authority of the United States of America. The Consent Order shall not be construed as a covenant not to sue, release, waiver or limitation of any rights, remedies, powers and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, or any other statutory, regulatory or common law enforcement authority of the United States.

3. Compliance by Respondent with the terms of this Consent Order shall not relieve Respondent of its obligations to comply with RCRA or any other applicable local, State or federal laws or regulations including without limitation, any conditions of a permit issued under RCRA or any other applicable local, State or Federal law or regulation.

4. The entry of this Consent Order and Respondent's consent to comply shall not limit or otherwise preclude the Agency from taking additional enforcement action pursuant to Section 3008(h) should the Agency determine that such actions are warranted.

5. This Consent Order is not intended to be nor shall it be construed as a permit. This Consent Order does not relieve Respondent of any obligation to obtain and comply with any local, state or federal permits.

6. EPA reserves the right to perform any portion of the work herein or any additional site characterization, studies, and response/correction actions as it deems necessary to protect public health and the environment. EPA may exercise its authority to undertake removal actions or remedial actions under CERCLA, and the right to take additional enforcement action pursuant to Section 3008(h) should the Agency determine that such actions are warranted.

XVII. OTHER CLAIMS

Nothing in this Consent Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Facility.

XVIII. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Consent Order shall be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations. Respondent shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and regulations.

XIX. FUNDING

Respondent shall seek sufficient funding through the Department of Defense budgetary process to meet the timeframes for achieving compliance under this Consent Order. Any obligation for the payment or obligation of funds by Respondent established by the terms of this Consent Order shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. 1341. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring payment or obligation of such funds shall be appropriately adjusted.

Section 1-5 of E.O. 12088 states that "The head of each executive agency shall ensure that sufficient funds for compliance with applicable pollution control standards are requested in the Agency budget." Failure to obtain adequate funds or appropriations does not, in any way, release the Facility from its ultimate obligation to comply with this Consent Order. If appropriated funds are not available to fulfill Respondent's obligations under this Consent Order, EPA reserves the right to initiate an action against any other person, or to take any corrective action which would be appropriate absent this Consent Order.

XX. SUBSEQUENT MODIFICATION

1. This Consent Order may only be amended by mutual agreement of EPA and Respondent. Such amendments shall be in writing, shall be signed by both parties, shall have as their effective date the date on which they are signed by EPA, and shall be incorporated into this Consent Order.

2. Any reports, plans, specifications, schedules, and attachments required by this Consent Order are, upon written approval by EPA, incorporated into this Consent Order. Any non-compliance with such EPA-approved reports, plans, specifications, schedules, and attachments shall be considered a violation of this Consent Order.

3. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by Respondent will be construed as relieving Respondent of its obligation to obtain written approval, if and when required by this Consent Order.

XXI. SEVERABILITY

If any provision or authority of this Consent Order or the application of this Consent Order to any party or circumstances is held by any judicial or administrative authority to be invalid, the application of such provisions to other parties or circumstances and the remainder of the Consent Order shall remain in force and shall not be affected thereby.

XXII. TERMINATION AND SATISFACTION

The provisions of this Consent Order shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Consent Order, including any additional tasks determined by EPA to be required pursuant to this Consent Order, or any continuing obligation or promises have been satisfactorily completed. EPA shall issue such notice after receipt of notice by Respondent that it has completed the requirements of the Consent Order. This Consent Order may be terminated at any time upon mutual agreement of both parties.

XXIII. SURVIVABILITY/PERMIT INTERGRATION

Subsequent to the issuance of this Consent Order, a RCRA permit may be issued to the facility incorporating the requirements of this Consent Order by reference into the permit.

Any requirements of this Consent Order shall not terminate upon the issuance of a RCRA permit unless the requirements are expressly replaced by requirements in the permit.

XXIV. EFFECTIVE DATE

The effective date of this Consent Order shall be the date on which it is signed by EPA. Because this Order was entered with the consent of both parties, Respondent waives its right to request a public hearing pursuant to Section 3008(b) of RCRA, 42 U.S.C. Section 6928(b).

IT IS SO AGREED AND ORDERED:

BY: Patrick M. Tobin — December 4, 1989
U.S. Environmental Protection Agency — Date

BY: Nancy A. Stelle, Deputy Director Environment — Nov. 2, 1989
U.S. Department of the Navy — Date

ATTACHMENT A

SCOPE OF WORK FOR THE IMPLEMENTATION OF

INTERIM MEASURES

AT

MARINE CORPS AIR STATION, CHERRY POINT, N.C

SCOPE OF WORK FOR INTERIM MEASURES (IM) AT MARINE CORPS AIR STATION, CHERRY POINT, NORTH CAROLINA

PURPOSE

The purpose of Interim Measures (IM) is to mitigate the potential threat to human health and the environment. Interim measures must be consistent with and integrated into any long term solution at the Facility.

SCOPE

The Interim Measures program consists of the following four tasks:

* Interim Measures Workplan

  A. Interim Measures Objectives
  B. Health and Safety Plan
  C. Community Relations Plan

* Interim Measures Design Program

  A. Design Plans and Specifications
  B. Operations and Maintenance Plan
  C. Project Schedule
  D. Final Design Documents

* Interim Measures Construction Quality Assurance Plan

  A. Construction Quality Assurance Objectives
  B. Inspection Activities
  C. Sampling Requirements
  D. Documentation

* Reports

  A. Progress
  B. Interim Measures Workplan
  C. Final Design Documents
  D. Draft Interim Measures Report
  E. Final Interim Measures Report

INTERIM MEASURES WORKPLAN

The Respondent shall prepare an Interim Measures Workplan. The Workplan shall include the development of several plans which shall be prepared concurrently.

A. Interim Measures Objectives

Specific Interim Measures Objectives shall include but not be limited to:

1. Management of Accumulation Areas (RFA Units F-22, F-38, F-42, S-6, S-11)

The IM Workplan shall include details for the management and removal of collected water and hazardous wastes and/or hazardous constituents within all accumulation areas for future operations. These details shall include but not be limited to the following:

a. Spilled and leaked hazardous wastes and/or hazardous constituents must be removed from containment areas, catch basins, sumps, and drains within 24 hours of the occurrence, or in as timely a manner as is possible to prevent overflow or harm to human health and/or the environment.

b. Spilled and leaked hazardous wastes and/or hazardous constituents must be removed from surrounding soils within 24 hours of the occurrence, or in as timely a manner as is possible to prevent harm to human health and/or the environment.

c. Collected precipitation that contains hazardous waste and/or hazardous constituents shall not be released into the environment without proper treatment, as determined by EPA.

2. Management of Oil/Water Separators (RFA Units F-14, S-10, C-15)

The IM Workplan shall include details for the management of releases from all Oil/Water Separators to the environment. These details shall include but not be limited to the following:

a. All drainage lines exiting Oil/Water Separators must have control valves.

b. Spilled and leaked hazardous waste and/or hazardous constituents must be removed from surrounding soils of Oil/Water Separators within 24 hours of the time of occurrence, or in a timely manner as is possible to prevent overflow or harm to human health and/or the environment.

c. Routine discharges from these units that contain hazardous waste and/or hazardous constituents shall not be released directly into the environment without proper treatment, as determined by EPA.

B. Health and Safety Plan

Respondent shall prepare a facility Health and Safety Plan.

1. Major elements of the Health and Safety Plan shall include:

   a. Facility description including availability of resources such as roads, water supply, electricity, and telephone service;

   b. Description of the known hazards and an evaluation of the risks associated with each activity conducted, including, but not limited to on-and off-site exposure to contaminants during the implementation of interim measures at the Facility;

   c. A list of key personnel and alternates responsible for site safety, response operations, and for protection of public health;

   d. Delineation of the work area;

   e. Protection levels to be worn by personnel in work area;

   f. Procedures to control site access;

   g. Decontamination procedures for personnel and equipment;

   h. Site emergency procedures and contingency plans;

   i. Emergency medical care for injuries and toxicological problems;

   j. Description of requirements for an environmental surveillance program;

   k. Specification for any routine and special training required for responders; and

   l. Procedures for protecting worker from weather-related problems.

2. The Facility Health and Safety Plan shall be consistent with:

   a. NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);

   b. United States Environmental Protection Agency (EPA) Order 1440.1 - Respiratory Protection;

   c. EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;

   d. Facility Contingency Plan;

   e. EPA Standard Operating Safety Guide (1984);

f. OSHA regulations, particularly in 20 CFR 1910 and 1926;

g. State and local regulations; and

h. Other EPA guidance as provided.

C. Community Relations Plan

Respondent shall prepare a plan, for the dissemination of information to the public, regarding interim measure activities and results. These activities shall include the preparation and distribution of fact sheets and participation in public meetings.

INTERIM MEASURES DESIGN PROGRAM

The Interim Measures Design Program shall be incorporated in the Interim Measures Workplan to implement the interim measures at the Facility. The Interim Measures Design Program includes four activities: design plans and specifications, operations and maintenance plan, project schedule, and final design documents. The design program shall include removal, treatment and/or disposal methods for any hazardous waste and/or hazardous waste constituents from the Accumulations Areas, Oil/Water Separators, and contaminated soils as discussed in the Interim Measures Workplan objectives.

A. Design Plans and Specifications

Respondent shall develop clear comprehensive design plans and specifications which include but are not limited to the following:

1. Discussion of the design strategy and the design basis, including:

   a. Compliance with all applicable or relevant environmental and public health standards; and

   b. Minimization of environmental and public impacts.

2. Discussion of the technical factors of importance including:

   a. Use of currently accepted environmental control measures and technology;

   b. The constructability of the design; and

   c. Use of currently acceptable construction practices and techniques.

3. Description of assumptions made and detailed justification of these assumptions;

4. Discussion of the possible sources of error and references to possible operation and maintenance problems;

5. Detailed drawings of the proposed design including:

   a. Qualitative flow sheets;

   b. Quantitative flow sheets;

   c. Facility layout; and

   d. Utility locations.

6. Tables listing materials, equipment and specifications;

7. Tables giving material balances; and

8. Appendices including:

   a. Sample calculations (one examples presented and explained clearly for significant or unique design calculations);

   b. Derivation of equations essential to understanding the report; and

   c. Results of laboratory or field tests.

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications, Respondent shall coordinate and cross-check the specifications and drawings and complete the proofing of the edited specifications and required cross-checking of all drawings and specifications.

B. Operations and Maintenance Plan

Respondent shall prepare an Operation and Maintenance Plan to cover both implementation and long-term maintenance of the interim measures. The plan shall be composed of the following elements:

1. Equipment start-up and operator training:

   Respondent shall prepare and include in the technical specifications governing treatment systems, contractor requirements for providing: appropriate service visits by experienced personnel to supervise the installation, adjustment, start-up and operation of the treatment systems, and training covering appropriate operational procedures once the start-up has been successfully accomplished.

2. Description of normal operation and maintenance (O&M):

   a. Description of tasks for operation;

   b. Description of tasks for maintenance;

   c. Description of prescribed treatment or operation conditions;

d. Schedule showing frequency of each O&M task; and

e. Common and/or anticipated remedies.

3. Description of routine monitoring and laboratory testing:

a. Description of monitoring tasks;

b. Description of required laboratory and their interpretation;

c. Required QA/QC; and

d. Schedule of monitoring frequency and date, if appropriate, when monitoring may cease.

4. Description of equipment:

a. Equipment identification;

b. Installation of monitoring components;

c. Maintenance of site equipment; and

d. Replacement schedule for equipment and installed components; and

5. Records and reporting mechanisms required:

a. Daily operating logs;

b. Laboratory records;

c. Mechanism for reporting emergencies;

d. Personnel and maintenance records; and

e. Monthly/annual reports to Federal/State agencies.

The Operation and Maintenance Plan shall be submitted with the Final Design Documents.

C. Project Schedule

Respondent shall develop a detailed Project Schedule for construction and implementation of the interim measures which identifies timing for initiation and completion of all critical path tasks. Respondent shall specifically identify dates for completion of the project and major interim milestones which are enforceable terms of this Order. A Project Schedule shall be submitted simulataneously with the Final Design Documents.

D. Final Design Documents

The Final Design Documents shall consist of the Final Design Plans and Specifications (100% complete), the Final Draft Operation and Maintenance Plan, and Project Schedule. Respondent shall submit the final documents 100% complete with reproducible drawings and specifications. The quality of the design documents should be such that Respondent would be able to include them in a bid package and invite contractors to submit bids for the construction project.

INTERIM MEASURES CONSTRUCTION QUALITY ASSURANCE PLAN

The Interim Measures Construction Quality Assurance (CQA) Plan shall be incorporated in the Interim Measures Workplan to ensure, with a reasonable degree of certainty, that a completed interim measures(s) meets or exceeds all design criteria, plans, and specifications. The CQA Plan must be submitted to EPA for approval prior to the start of construction. This CQA Plan shall include the following elements: construction quality assurance objectives, inspection activities, and documentation. Upon EPA review, and EPA approval of the CQA Plan, Respondent shall construct and implement the interim measures in accordance with the approval design, schedule, CQA plan, and operation and maintenance plan.

A. Construction Quality Assurance Objectives

In the CQA Plan, Respondent shall identify and document the objectives and framework for the development of a construction quality assurance program including, but not limited to, the following: responsibility and authority, personnel qualifications, inspection activities, sampling requirements, and documentation. The responsibility and authority of all organizations (i.e. technical consultants, construction firms, etc.), and key personnel involved in the construction of the interim measure shall be described fully in the CQA Plan. Respondent must identify a CQA officer and the necessary supporting inspection staff.

B. Inspection Activities

The observations and tests that will be used to monitor the construction and/or installation of the components of the interim measures shall be summarized in the CQA Plan. The Plan shall include the scope and frequency of each type of inspection. Inspections shall verify compliance with all environmental requirements and include, but not be limited, to air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests), etc. The inspection should also ensure compliance with all health and safety procedures. In addition to oversight inspections, Respondent shall conduct the following activities:

1. Preconstruction inspection and meeting

Respondent shall conduct a preconstruction inspection and meeting to:

a. Review methods for documenting and reporting inspection data;

b. Review methods for distributing and storing documents and reports;

c. Review work area security and safety protocol;

d. Discuss any appropriate modifications of the construction quality assurance plan to ensure that site-specific considerations are addressed; and

e. Conduct a site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspection and meeting shall be documented by a designated person, and minutes should be transmitted to all parties.

2. Prefinal inspection

Upon preliminary project completion, Respondent shall notify EPA for the purposes of conducting a prefinal inspection. The prefinal inspection shall consist of a walk-through inspection of the entire project site. The inspection is to determine whether the project is complete and consistent with the contract documents and the EPA-approved interim measure. Any outstanding construction items discovered during the inspection will identified and noted. Additionally, treatment equipment will be operationally tested by Respondent. Respondent will certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting will be completed where deficiencies are revealed. The prefinal inspection report should outline the outstanding construction items, actions required to resolve items, completion date for these items, and date for final inspection.

3. Final inspection

Upon completion of any outstanding construction items, Respondent shall notify EPA for the purposes of conducting a final inspection. The final inspection shall consist of a walk-through inspection of the project site. The prefinal inspection report shall be used as a checklist, with the final inspection focusing on the outstanding construction items identified in the prefinal inspection. Confirmation shall be made that outstanding items have been resolved.

4. Sampling and testing requirements

The CQA Plan shall present sampling and testing activities, sample size, sample and test locations, frequency of testing, acceptance and rejection criteria, and plans for correcting problems.

C. Documentation

Reporting requirements for CQA activities shall be described in detail in the CQA Plan. This plan shall include such items as daily summary reports, inspection data sheets, problem identification and iterim measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records shall be presented in the CQA Plan.

REPORTS

The Interim Measures Workplan shall include reporting requirements. The reports shall include, but not be limited to the following: progress reports, the Interim Measures Workplan, design plans and specifications, operation and maintenance plan, final design documents, and the draft and final interim measures report.

A. Progress Reports

Respondent shall, at a minimum, provide EPA with monthly progress reports signed by Respondent's Project Coordinator and containing:

1. A description and estimate of the percentage of the interim measures completed;

2. Summaries of all findings;

3. Summaries of all changes made in the interim measures during the reporting period;

4. Summaries of all contacts with representatives of the local community, public interest groups, or State government during the reporting period;

5. Summaries of all problems or potential problems encountered during the reporting period;

6. Actions being taken to rectify problems;

7. Changes in personnel during the reporting period;

8. Projected work for the next reporting period; and

9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

B. Interim Measures Workplan

Respondent shall submit an Interim Measures Workplan to EPA as discussed in this attachment within one-hundred and eighty (180) calendar days of the effective date of this Order.

C. Final Design Document

Respondent shall submit Final Design Documents as discussed in this attachment within one-hundred and eighty (180) calendar days of the effective date of this Order.

D. Draft Interim Measures Report

At the "completion" of project construction (except for long-term operation, maintenance and monitoring), Respondent shall submit an Interim Measures Implementation Report to EPA. The Report shall document that the project is consistent with the design specifications, and that the interim measures are performing adequately. The Report shall include, but not be limited to, the following elements:

1. Synopsis of the interim measures and certification of the design and construction;

2. Explanation of any modifications to the plans and why these were necessary for the project;

3. Listing of the criteria, established before the interim measures were initiated, for judging the functioning of the interim measures and also explaining any modification to these criteria;

4. Results of facility monitoring, indicating that the interim measures will meet or exceed modification criteria; and

5. Explanation of the operation and maintenance (including monitoring) to be undertaken at the Facility.

This report shall include but not be limited to: inspection summary reports, inspection data sheets, problem identification and corrective measure reports, block evaluation reports, photographic reporting data sheets, design engineers' acceptance reports, deviation from design and material specifications (with justifying documentation), and as-built drawings.

E. Final Interim Measures Report

Respondent shall finalize the Interim Measures Workplan and the Interim Measures Implementation Report incorporating comments received on draft submissions.

Facility Submission Summary

A summary of the information reporting requirements contained in the Interim Measures Scope of Work is present below:

Facility Submissions	Due Date
Interim Measures Workplan - Interim Measures Objective - Health and Safety Plan - Community Relations Plan	Within one-hundred and eighty (180) calendar days
Final Design Documents - Design Plans and Specifications - Operation and Maintenance Plan - Project Schedule	Within one-hundred and eighty (180) calendar days
Construction Quality Assurance Plan - Construction Quality Assurance Objectives - Inspection Activities	Within one-hundred and eighty (180) calendar days
Draft Interim Measures Report	Upon completion of construction
Final Interim Measures Report	Forty-five (45) days after receipt of EPA comments on Draft Interim Measures Report
Progress Reports	Monthly

* All dates are calculated from the effective date of this Order unless otherwise specified.

ATTACHMENT B

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION (RFI)

AT

MARINE CORPS AIR STATION, CHERRY POINT, N.C.

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION (RFI) AT MCAS, CHERRY POINT, NORTH CAROLINA

PURPOSE

The purpose of this RCRA Facility Investigation is to determine the nature and extent of releases of hazardous waste or constituents from regulated units, solid waste management units, and other source areas at the facility and to gather all necessary data to support the Corrective Measures Study. The Respondent shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RCRA Facility Investigation at MCAS Cherry Point, North Carolina.

SCOPE

The RCRA Facility Investigation consists of seven tasks:

Task I: Description of Current Conditions

A. Facility Background
B. Nature and Extent of Contamination

Task II: Pre-Investigation Evaluation of Corrective Measure Technologies

Task III: RFI Workplan Requirements

A. Project Management Plan
B. Sampling and Analysis Plan
C. Data Management Plan
D. Health and Safety Plan
E. Community Relations Plan

Task IV: Facility Investigation

A. Environmental Setting
B. Source Characterization
C. Contamination Characterization
D. Potential Receptor Identification

Task V: Investigation Analysis

A. Data Analysis
B. Protection Standards

Task VI: Laboratory and Bench-Scale Studies

Task VII: Reports

A. Preliminary and Workplan
B. Progress
C. Draft and Final

TASK I: DESCRIPTION OF CURRENT CONDITIONS

The Respondent shall submit for EPA review and EPA approval a report providing the background information pertinent to the facility and contamination as set forth below. The data gathered during any previous investigations or inspections and other relevant data shall be included. The report shall also contain an analysis and summary of the results of the facility investigations implemented pursuant to the Installation Restoration Program.

A. Facility Background

The Respondent's report shall summarize the regional location, pertinent boundary features, general facility physiography, hydrogeology, and historical use of the facility for the treatment, storage, or disposal of solid and hazardous waste. The Respondent's report shall include:

1. Maps depicting the following features. All maps shall be consistent with the requirements set forth in 40 CFR 270.14 and be of sufficient detail and accuracy to locate and report all current future work performed at the facility:

   a. Geographic location (specifically, plot the facility on a topographic and county map);

   b. Property lines, with the owners of all adjacent property clearly indicated;

   c. Topography (with appropriate contour interval and scale), waterways, all wetlands, floodplains, water features, drainage patterns;

   d. All tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;

   e. All solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980;

   f. All known past solid or hazardous waste treatment, storage or disposal areas regardless of whether they were active on November 19, 1980;

   g. All known past and present product and waste underground tanks or piping;

   h. Surrounding land uses (residential, commercial, agricultural, recreational); and

i. The location of all borings, production and ground-water monitoring wells. These wells shall be clearly labeled and ground and top of casing elevations included (these elevations may be included as an attachment).

2. A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the facility;

3. Approximate dates or periods of past product and waste spills, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response; and

4. A summary of past permits requested and/or received, any enforcement actions and their subsequent responses and a list of documents and studies prepared for the facility.

B. Nature and Extent of Contamination

The Respondent shall prepare and submit for EPA review and EPA approval a preliminary report describing the existing information on the nature and extent of contamination.

1. The Respondent's report shall summarize all possible source areas of contamination. This, at a minimum, should include all regulated units, solid waste management units, spill areas, and other suspected source areas of contamination. For each waste management unit, the Respondent shall submit to EPA a list identifying all waste streams and waste materials (including any wastes accepted from offsite facilities) subject to storage, treatment, or disposal in each waste management unit. The list shall include all wastes destined for the unit, whether it is hazardous or non-hazardous. At a minimum, the Respondent shall identify the following:

   a. Location of unit/area (which shall be depicted on a facility map);

   b. Quantities of solid and hazardous wastes;

   c. Hazardous waste or constituents, to the extent known; and

   d. Identification of areas where additional information is necessary.

2. The Respondent shall prepare an assessment and description of the existing degree and extent of contamination. This should include:

a. Available monitoring data, sampling results and qualitative information on locations and levels of contamination at the Facility, including an areal and cross-sectional view of plume extent (define a zero line);

b. All potential migration pathways including information on geology, pedology, hydrogeology, physiography, hydrology, water quality, meterology, and air quality;

c. The potential impact(s) on human health and the environment, including demography, ground-water and surface-water use, and land use.

TASK II: PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURE TECHNOLOGIES

The Respondent shall submit to EPA a report that identifies the potential corrective measure technologies that may be used on-site or off-site for the containment, treatment, remediation, and/or disposal of contamination. This report shall also identify any field data that needs to be collected in the facility investigation to facilitate the evaluation and selection of the final corrective measure or measures.

TASK III: RFI WORKPLAN REQUIREMENTS

The Respondent shall prepare a RCRA Facility Investigation (RFI) Workplan that meets the requirements of Task IV of Attachment B of this Consent Order and the "RFI Guidance" referenced in Section VI of the Consent Order. This RFI Workplan shall include the development of several plans, which shall be prepared concurrently. During the RCRA Facility Investigation, it may be necessary to revise the RFI Workplan to increase or decrease the detail of information collected to accommodate the facility specific situation. The RFI Workplan includes the following:

A. Project Management Plan

The Respondent shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, projected cost, and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Sampling and Analysis Plan

The Respondent shall prepare a plan to document all monitoring procedures: field sampling, sampling procedures and sample analysis performed during the investigation to characterize the environmental setting, source, and release of hazardous constituents, so as to ensure that all information, data and resulting decisions are technically sound, statistically valid, and properly documented. The Sampling Strategy and Procedures shall by in accordance with Characterizaton of Hazardous Waste Sites-A Methods Manual: Volume II, Available Sampling Methods, EPA-600/4-84-076, or EPA Region IV

Engineering Support Branch's Standard Operating Procedures and Quality Assurance Manual(SOP). Any deviations from these references must be requested by the applicant and approved by EPA. The Sampling and Analysis Plan must specifically discuss the following unless the EPA-600/4-84-076 or SOP procedures are specifically referenced.

1. Data Collection Strategy

The Data Collection Strategy section of the Sampling and Analysis Plan shall include but not be limited to the following:

a. Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;

b. Description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data;

c. Description of the rationale used to assure that the data accurately and precisely represents a characteristic population, parameter variations at a sampling point, a process condition and/or an environmental condition. Examples of factors which shall be considered and discussed include:

   i) Environmental conditions at the time of sampling;

   ii) Number of sampling points;

   iii) Representativeness of selected media; and

   iv) Representativeness of selected analytical parameters.

d. Description of the measures to be taken to assure that the following data sets can be compared to each other:

   i) RFI data generated by the Respondent over some time period;

   ii) RFI data generated by an outside laboratory or consultant versus data generated by the Respondent;

   iii) Data generated by separate consultants or laboratories; and

   iv) Data generated by an outside consultant or laboratory over some time period.

e. Details relating to the schedule and information to be provided in quality assurance reports. The reports should include but not be limited to:

   i) Periodic assessment of measurement data accuracy, precision, and completeness;

   ii) Results of performance audits;

iii) Results of system audits;

iv) Significant quality assurance problems and recommended solutions; and

v) Resolutions of previously stated problems.

2. Sampling Strategy

The Sampling Strategy section of the Sampling and Analysis Plan shall discuss:

a. Selecting appropriate sampling locations, depths, etc.;

b. Providing a statistically sufficient number of sampling sites;

c. Obtaining all necessary ancillary data;

d. Determining conditions under which sampling should be conducted;

e. Determining which media are to be sampled (e.g., groundwater, air, soil, sediment, etc.);

f. Determining which parameters are to be measured and where;

g. Selecting the frequency and length of sampling periods;

h. Selecting the types of sample (e.g., composites vs. grabs) and number of samples to be collected.

3. Sampling Procedures

a. Documenting field sampling operations and procedures, including;

i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, and adsorbing reagents);

ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

iii) Documentation of specific sample preservation methods;

iv) Calibration of field devices;

v) Collection of replicate samples;

vi) Submission of field-biased blanks, where appropriate;

vii) Potential interferences present at the facility;

viii) Construction materials and techniques, associated with monitoring wells and piezometers;

ix) Field equipment listing and sample containers;

x) Sampling order; and

xi) Decontamination procedures.

b. Selecting appropriate sample containers;

c. Sample preservation; and

d. Chain-of-custody, including:

i) Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and

ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.

4. Sample Analysis

Sample analysis shall be conducted in accordance with "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Final", SW-846. The Sample Analysis section of the Sampling and Analysis Plan shall specify the following:

a. Chain-of-custody procedures, including:

i) Identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;

ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

iii) Specification of laboratory sample custody procedures for sample handling, storage and dispersement for analysis.

b. Sample storage and holding times;

c. Sample preparation methods;

d. Analytical procedures, including:

i) Scope and application of the procedure;

ii) Sample matrix;

iii) Potential interferences;

iv) Precision and accuracy of the methodology; and

v) Method detection limits.

e. Calibration procedures and frequency;

f. Data reduction, validation and reporting;

g. Internal quality control checks, laboratory performance and systems audits and frequency, including:

i) Method blank(s);

ii) Laboratory control sample(s);

iii) Calibration check sample(s);

iv) Replicate sample(s);

v) Matrix-spiked sample(s)

vi) "Blind" quality control sample(s);

vii) Control charts;

viii) Surrogate samples;

ix) Zero and span gases; and

x) Reagent quality control checks.

h. Preventive maintenance procedures and schedules;

i. Corrective action (for laboratory problems); and

j. Turnaround time.

C. Data Management Plan

The Respondent shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

a. Unique sample or field measurement code;

b. Sampling or field measurement location and sample or measurement type;

c. Sampling or field measurement raw data;

d. Laboratory analysis ID number;

e. Property or component measured; and

f. Result of analysis (e.g., concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

a. Unsorted (raw) data;

b. Results for each medium, or for each constituent monitored;

c. Data reduction for statistical analysis;

d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

e. Summary data.

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

a. Display sampling location and sampling grid;

b. Indicate boundaries of sampling area, and areas where more data is required;

c. Displays levels of contamination at each sampling location;

d. Display geographical extent of contamination;

e. Display contamination levels, averages, and maxima;

f. Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters; and

g. Indicate features affecting intramedia transport and show potential receptors.

D. Health and Safety Plan

The Respondent shall prepare a Facility Health and Safety Plan.

1. Major elements of the Health and Safety Plan shall include:

   a. Facility description including availability of resources such as roads, water supply, electricity and telephone service;

   b. Describe the known hazards and evaluate the risks associated with the incident and with each activity conducted, including, but not limited to on-site and off-site exposure to contaminants during the implementation of interim measures at the facility.

   c. List key personnel and alternates responsible for site safety, responses operations, and for protection of public health;

   d. Delineate work area;

   e. Describe levels of protection to be worn by personnel in work area;

   f. Establish procedures to control site access;

   g. Describe decontamination procedures for personnel and equipment;

   h. Establish site emergency procedures;

   i. Address emergency medical care for injuries and toxicological problems;

   j. Describe requirements for an environmental surveillance program;

   k. Specify any routine and special training required for responders; and

   l. Establish procedures for protecting workers from weather-related problems.

2. The Facility Health and Safety Plan shall be consistent with:

   a. NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);

   b. EPA Order 1440.1 - Respiratory Protection;

   c. EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;

   d. Facility Contingency Plan;

   e. EPA Standard Operating Safety Guide (1984);

f. OSHA regulations particularly in 20 CFR 1910 and 1926;

g. State and local regulations; and

h. Other EPA guidance as provided.

Community Relations Plan

The Respondent shall prepare a plan, for the dissemination of information to the public regarding investigation activities and results.

TASK IV: FACILITY INVESTIGATION

The Respondent shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of contamination (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical quality to support the development and evaluation of the corrective measure alternative or alternatives during the Corrective Measures Study.

The facility investigation activities shall follow the plans set forth in Task III. Concurrent with the implementation of the Facility Investigation, Respondent shall prepare and submit to EPA an Annual RFI Groundwater Report. This report shall present the following: a determination of the groundwater flow direction(s) based on groundwater elevations collected during sampling events; a determination of groundwater flow rate(s); a determination of the adequacy of the groundwater monitoring system to meet its intended objective(s). Each report shall be due by no later than January 31 of each year. Each report shall contain that information available to Respondent at time of submittal. All sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Respondent shall collect information to supplement and verify existing information on the environmental setting at the facility. The Respondent shall characterize the following:

1. Hydrogeology

The Respondent shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the facility, including:

i) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;

ii) Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);

iii) Depositional history;

iv) Identification and characterization of areas and amounts of recharge and discharge;

v) Regional and facility specific groundwater flow patterns; and

vi) Characterize seasonal variations in the groundwater flow regime.

b. An analysis of any topographic features that might influence the groundwater flow system. (Note: Stereographic analysis of aerial photographs may aid in this analysis).

c. Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e, the aquifers and any intervening saturated and unsaturated units), including:

i) Hydraulic conductivity and porosity (total and effective);

ii) Lithology, grain size, sorting and degree of cementation;

iii) Aquifer interconnection analysis/interpretation of hydraulic interconnections between saturated zones. Identify from field data collected, including aquifer and aquitard testing, the depths, thickness, degree of lateral continuity and hydraulic characteristics of any discernible confining units between water-bearing zones underneath the facility; and

iv) The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content etc.).

d. Field studies and cores, structural geology and hydrogeologic cross sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways identifying:

i) Sand and gravel deposits in unconsolidated deposits;

ii) Zones of fracturing or channeling in consolidated or unconsolidated deposits;

iii) Zones of higher permeability or low permeability that might direct and restrict the flow of contaminants;

iv) The uppermost aquifer: geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs; and

v) Water-bearing zones above the first confining layer that may serve as a pathway for contaminant migration including perched zones of saturation.

e. Potentiometric relationships analysis:

Respondent shall document and describe the potentiometric relationships within and between any identifiable water-bearing zones beneath the facility including:

i) Water-level contour and/or potentiometric maps;

ii) Hydrologic cross sections showing vertical gradients;

iii) The flow system, including the vertical and horizontal components of flow; and

iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

f. A description of manmade influences that may affect the hydrogeology of the site, identifying:

i) Active and inactive local water-supply and production wells with an approximate schedule of pumping; and

ii) Manmade hydraulic structures (pipelines, french drains, ditches).

2. Soils

The Respondent shall conduct a program to characterize the soil and rock units above the water table in the vicinity of the contaminant releases. Such characterization shall include but not be limited to, the following information:

a. SCS soil classification;
b. Surface soil distribution;
c. Soil profile, including ASTM classification of soils;
d. Transects of soil stratigraphy;
e. Hydraulic conductivity (saturated and unsaturated);
f. Relative permeability;
g. Bulk density;
h. Porosity;

i. Soil sorptive capacity;
j. Cation exchange capacity (CEC);
l. Soil pH;
m. Particle size distribution;
n. Depth of water table;
o. Moisture content;
p. Effect of stratification on unsaturated flow;
q. Infiltration;
r. Evapotranspiration;
s. Storage capacity;
t. Vertical flow rate; and
u. Mineral content.

3. Surface Water and Sediment

The Respondent shall conduct a program to characterize the surface-water bodies in the vicinity of the facility. Such characterization shall include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface-water bodies including:

i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;

ii) For rivers, streams, ditches, drains, swamps and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, and flooding tendencies (i.e., 100 year event);

iii) For impoundments: location, elevation, surface area, depth, volume, freeboard, and purpose of impoundment;

iv) Drainage patterns; and

v) Evapotranspiration.

b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients, chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c. Description of sediment characteristics including:

i) Deposition area;

ii) Thickness profile; and

iii) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

4. Air

The Respondent shall provide information characterizing the climate in the vicinity of the facility. Such information shall include, but not be limited to:

a. A description of the following parameters:

i) Annual and monthly rainfall averages;

ii) Monthly temperature averages and extremes;

iii) Wind speed and direction;

iv) Relative humidity/dew point;

v) Atmospheric pressure;

vi) Evaporation data;

vii) Development of inversions; and

viii) Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence.

b. A description of topographic and manmade features which affect air flow and emission patterns, including:

i) Ridges, hills or mountain areas;

ii) Surface water bodies (e.g., rivers, lakes, streams, surface impoundments);

iii) Wind breaks and forests; and

iv) Buildings and incinerators.

B. Source Characterization

The Respondent shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, including: type, quantity; physical form; disposition (contamination or nature of deposits); and facility characteristics affecting release (e.g., facility security, engineered barriers, NPDES outfalls, etc.). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area characteristics:

a. Location of unit/disposal area;
b. Type of unit/disposal area;
c. Design features;
d. Operating practices (past and present);

e. Period of operation;
f. Age of unit/disposal area;
g. General physical conditions; and
h. Method used to close the unit/disposal area.

2. Waste Characteristics:

a. Type of waste placed in the unit;

i) Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);

ii) Quantity; and

iii) Chemical composition.

b. Physical and chemical characteristics;

i) Physical form (solid, liquid, gas);
ii) Physical description (e.g., powder, oily sludge);
iii) Temperature;
iv) pH;
v) General chemical class (e.g., acid, base, solvent);
vi) Molecular weight;
vii) Density;
ix) Viscosity;
x) Solubility in water;
xi) Cohesiveness of the waste; and
xii) Vapor pressure.

c. Migration and dispersal characteristics of the waste;

i) Sorption;

ii) Biodegradability, bioconcentration, biotransformation;

iii) Photodegradation rates;

iv) Hydrolysis rates; and

v) Chemical transformations.

The Respondent shall document the procedures used in making the above determinations.

C. <u>Contamination Characterization</u>

The Respondent shall collect, prepare and submit analytical data on groundwater, soils, surface water, sediment, and subsurface gas contamination in the vicinity of the facility. This data shall be sufficient to define the extent, origin, direction, and rate of

movement of contaminant plumes. Data shall include time and location of sampling, media sampled, concentrations found, and conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Respondent shall address the following types of contamination at the facility:

1. Groundwater Contamination

The Respondent shall conduct a Groundwater Investigation to characterize any plumes of contamination at the facility. This investigation shall at a minimum provide the following information:

a. A description of the horizontal and vertical extent of any immiscible and dissolved plume(s) originating from the facility;

b. The horizontal and vertical direction of contamination movement;

c. The velocity of contaminant movement;

d. The horizontal and vertical concentration profiles of Appendix IX constituents in the plume(s);

e. An evaluation of factors influencing the plume movement including, but not limited to, contaminant solubility, speciation, adsorption, leachability, exchange capacity, biogradability, hydrolysis, photolysis, oxidation, and transformations; and

f. An extrapolation of future contaminant movement.

The Respondent shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.)

2. Soil Contamination

The Respondent shall conduct an investigation to characterize the contamination of the soil and rock units above the water table in the vicinity of the contaminant release. The investigation shall include, but not be limited to, the following areas:

-Crash Crew Burn Pit (RFA Unit F-13)
-Crash Crew Burn Pit Oil/Water Separator (RFA Unit F-14)
-VMGR 252 Accumulation Area (RFA Unit F-22)
-Crash Crew Accumulation Area (RFA Unit F-38)
-MAG 14 Accumulation Area (RFA Unit F-42)
-NADEP Former Drum Storage Area (RFA Unit N-22)
-H & HS 28 Accumulation Area (RFA Unit S-6)
-MWCS 28 Accumulation Area (RFA Unit S-11)
-Fuel Line Leak Site (RFA Unit S-A)
-DRMO Hazardous Waste Storage Facility (RFA Unit C-1)

-Facilities Maintenance Hazardous Waste Storage Facility (RFA Unit C-2)
-Construction Landfill (RFA Unit C-8)
-Former Sludge Application Area (RFA Unit C-10)
-Current Sludge Application Area (RFA Unit C-11)
-Polishing Ponds #1 and #2 (RFA Unit C-12)
-Leach Fields (RFA Unit C-17)
-PCB Transformer Spill (RFA Unit C-A)
-EOD Pit/Landfill (IAS Unit I-3)
-Borrow Pit/Landfill (IAS Unit I-4)
-Storage Tank (IAS Unit I-5)
-Fly Ash Ponds (IAS Unit I-6)
-Old Incinerator and Adjacent Area (IAS Unit I-7)
-Tank Farm B (IAS Unit I-8)
-Tank Farm D (IAS Unit I-9)
-Old Sanitary Landfill (IAS Unit I-10)
-Crash Crew Training Area (IAS Unit I-12)
-Tank Farm A (IAS Unit I-13)
-Area and Ditch Behind NADEP (IAS Unit I-15)
-Landfill at Sandy Branch (IAS Unit I-16)
-Defense Property Disposal Office Storage Area (IAS Unit I-17)
-Borrow Pit/Landfill (IAS Unit I-21)

These areas were identified in the 1988 RFA Report and the 1983 NACIP-IAS documents. The investigation shall provide the following information:

a. A description of the vertical and horizontal extent of contamination;

b. A description of contaminant and soil chemical properties within the contaminant source area and plume. This includes contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contaminant movement; and

e. An extrapolation of future contaminant movement.

The Respondent shall document the procedures used in making the above determinations.

3. Surface-Water and Sediment Contamination

The Respondent shall conduct a surface-water investigation to characterize contamination in surface-water bodies (lakes and streams) resulting from contaminant releases at the facility. The investigation shall include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any immisicible or dissolved plume(s) originating from the facility, and the extent of contamination in underlying sediments;

b. The horizontal and vertical direction of contaminant movement;

c. The contamination velocity;

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e. An extrapolation of future contamination movement; and

f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

The Respondent shall document the procedures used in making the above determinations.

4. Air Contamination

The Respondent shall conduct an investigation to characterize the particulate and gaseous contaminants released into the atmosphere. This investigation shall provide the following information:

a. A description of the horizontal and vertical direction and velocity of contaminant movement;

b. The rate and amount of the release; and

c. The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

The Respondent shall document the procedures used in making the above determinations.

D. Potential Receptors

The Respondent shall collect, evaluate and submit data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples may be needed. Data on observable effects in ecosystems may also be obtained. The following characteristics shall be identified:

1. Local uses and possible future uses of groundwater:

a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and

b. Location of groundwater users including wells and discharge areas.

2. Local uses and possible future uses of surface waters draining the facility:

   a. Domestic and municipal (e.g. potable and lawn/gardening watering);
   b. Recreational (e.g. swimming, fishing);
   c. Agricultural;
   d. Industrial; and
   e. Environmental (e.g. fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including but not limited to:

   a. Recreation;
   b. Hunting;
   c. Residential;
   d. Commericial;
   e. Zoning; and
   f. Relationship between population locations and prevailing wind direction.

4. A description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A description of the ecology overlying and adjacent to the facility.

6. A demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to age, sex, and sensitive subgroups.

7. A description of any endangered or threatened species near the facility.

TASK V: INVESTIGATION ANALYSIS

The Respondent shall prepare an analysis and summary of all facility investigations and their results. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support the Corrective Measures Study.

A. Data Analysis

The Respondent shall analyze all facility investigation data outlined in Task IV and prepare a report on the type and extent of contamination at the facility including sources and migration pathways. The report shall describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative for the area.

B. Protective Standards

1. Groundwater Protection Standards

For all units the Respondent shall provide information to support the Agency's selection/development of Groundwater Protection Standards for all of the Appendix VIII constituents found in the groundwater during the Facility Investigation (Task IV).

a. The Groundwater Protection Standards shall consist of:

i) for any constituents listed in Table 1 of 40 CFR 264.94, the respective value given in that table (MCL) if the background level of the constituent is below the given in Table 1;

ii) the background level of that constituent in the groundwater; or

iii) a U.S. EPA approved Alternate Concentration Limit (ACL).

b. Information to support the Agency's selection of alternate Concentration Limits (ACL's) shall be developed by the Respondent in accordance with U.S. EPA guidance. For any proposed ACL's the Respondents shall include a justification based upon the criteria set forth in 40 CFR 264.94(b).

c. Within ninety (90) days of receipt of any proposed ACL's the U.S. EPA shall notify the Respondent in writing of approval, disapproval or modifications. The U.S. EPA shall specify in writing the reason(s) for any disapproval or modification.

d. Within sixty (60) days of receipt of the U.S. EPA's notification or disapproval of any proposed ACL, the Respondent shall amend and submit revisions to the U.S. EPA.

2. Other Relevant Protection Standards

The Respondent shall identify all relevant and applicable standards for the protection of human health and the environment (e.g. National Ambient Air quality Standards, Federally-approved state water quality standards, etc.).

TASK VI: LABORATORY AND BENCH-SCALE STUDIES

The Respondent shall conduct laboratory and/or bench scale studies to determine the applicability of a corrective measure technology or technologies to facility conditions. The Respondent shall analyze the technologies, based on literature review, vendor contracts, and past experience to determine the testing requirements.

The Respondent shall develop a testing plan identifying the types(s) and goal(s) of the study or studies, the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of the testing, the Respondent shall evaluate the testing results to assess the technology or technologies with respect to the site-specific questions identified in the test plan.

The Respondent shall prepare a report summarizing the testing program and its results, both positive and negative.

TASK VII: REPORTS

A. Preliminary and Workplan

The Respondent shall submit to the EPA for review and EPA approval reports on Tasks I and II when it submits the RCRA Facility Investigation Workplan (Task III).

B. Progress

At a minimum the Respondent shall provide the EPA with signed, monthly progress reports containing:

1. A description and estimate of the percentage of the RFI completed;

2. Summaries of all findings;

3. Summaries of all changes made in the RFI during the reporting period;

4. Summaries of all material contacts with representative of the local community, public interest groups or State government during the reporting period;

5. Summaries of all problems or potential problems encountered during the reporting period;

6. Actions being taken to rectify problems;

7. Changes in the personnel involved with the RFI during the reporting period;

8. Projected work for the next period; and

9. Copies of daily reports, inspection reports, laboratory/monitoring data, raw field data, etc.

C. Draft and Final

The Respondent shall prepare a Draft RCRA Facility Investigation Report(s) to present and document the findings of Tasks IV-V. The Draft RCRA Facility Investigation Report(s) shall be developed in draft form for EPA review. The RCRA Facility Investigation Report(s) shall be developed in final format incorporating comments received on the Draft RCRA Facility Investigation Report(s). Task VI shall be submitted as a separate report when the Final RCRA Facility Investigation Report(s) is submitted. All reports become final upon EPA approval.

Copies of all reports, including the Task I report, Task II report, Task III workplan, Task VI report and both the Draft and Final RCRA Facility Investigation Reports (Task IV-V) shall be provided by the Respondent to EPA.

Facility Submission Summary

A summary of the information reporting requirements contained in the RCRA Facility Investigation Scope of Work is presented below:

Facility Submission	Due Date*
Description of Current Situation (Task I)	one-hundred and eighty (180) calendar days
Pre-Investigation Evaluation of Corrective Measure Technologies (Task II)	one-hundred and eighty (180) calendar days
RFI Workplan (Task III)	one-hundred and eighty (180) calendar days
Draft RFI Report(s) (Task IV and V)	Upon completion according to schedules outlined in RFI Workplan
Annual RFI Groundwater Report	By January 31 of each year, beginning in 1991
Final RFI Report (Tasks IV and V)	forty-five (45) days after EPA comments on Draft RFI Report
Laboratory and Bench-Scale Studies (Task VI)	Concurrent with RFI Report, unless otherwise specified in approved schedule
Progress Reports on Tasks I through VI	Monthly
CMS Proposed Schedule	Concurrent with Final RFI Report
Annual UST Status Report	Annually, beginning one year from submittal date of Task I

*All due dates are calculated from the effective date of this Order unless otherwise specified.

ATTACHMENT C

SCOPE OF WORK FOR A CORRECTIVE MEASURES STUDY

AT

MARINE CORPS AIR STATION, CHERRY POINT, N.C.

SCOPE OF WORK FOR A CORRECTIVE MEASURE STUDY AT MARINE CORPS AIR STATION, CHERRY POINT, N.C

PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action or alternatives and to recommend the corrective measure or measures to be taken as Marine Corps Air Station Cherry Point, N.C. The Respondent will furnish the personnel, materials, and services necessary to prepare the Corrective Measure Study, except as otherwise specified. The Respondent shall submit to EPA a Draft CMS Report in accordance with the proposed schedule submitted concurrently with the RFI Final Report. This report shall contain all information requested in the task outlined below. EPA will review the Draft CMS Report and provide comments to the Respondent. Within forty-five (45) days of receipt of EPA comments, Respondent shall modify the Draft CMS Report to incorporate such comments and shall submit the revised CMS Report to EPA. EPA will approve the revised CMS Report or modify it. The revised CMS Report as approved or modified by EPA shall become the Final CMS Report. Upon receipt of the Final CMS Report, EPA shall announce its availability to the public for review and comments and then inform the Respondent of its final decision as to the approved Corrective Measures to be implemented.

SCOPE

The Corrective Measure Study consists of four tasks:

Task VIII: Identification and Development to the Corrective Measure Alternatives

- A. Description of Current Situation
- B. Establishment of Corrective Action Objectives
- C. Screening of Corrective Measures Technologies
- D. Identification of the Corrective Measure Alternatives

Task IX: Evaluation of the Corrective Measure Alternatives

- A. Technical/Environmental/Human Health/Institutional
- B. Cost Estimate

Task X: Justification and Recommendation of the Corrective Measure or Measures

- A. Technical
- B. Environmental
- C. Human Health

Task XI: Reports

- A Draft
- B. Final
- C. Public Review and Final Selection of Corrective Measures

TASK VIII: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified potential corrective measure technologies (Task II), the Respondent shall identify, screen and develop the alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Respondent shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation Report. The Respondent shall provide an update to information presented in Task I of the RFI to the Agency regarding previous response activities and any interim measures which have or are being implemented at the facility. The Respondent shall also make a facility-specific statement of the purpose for the response, based on the results of the RCRA Facility Investigation. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Respondent shall propose for EPA review and approval facility-specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RCRA Facility Investigation, EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, units must be consistent with, and as stringent as, those required under 40 CFR 264.100.

C. Screening of Corrective Measure Technologies

The Respondent shall review the results of the RCRA Facility Investigation and reassess the technologies specified in Task II and to identify additional technologies which are applicable at the facility. The Respondent shall screen the preliminary corrective measure technologies identified in Task II of the RCRA Facility Investigation and any supplemental technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should by eliminated from further consideration;

2. Waste Characteristics

   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

   During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatments methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternatives

The Respondent shall develop the Corrective Measure Alternatives based on the corrective action objectives and analysis of potential corrective measure technologies, as presented in Task II of the RCRA Facility Investigation and as supplemented following the preparation of the RFI Report. The Respondent shall rely on standard engineering practices to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternatives. The alternatives developed should represent a workable number of option(s) of which each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Respondent shall document the reasons for excluding technologies, identified in Task II, as supplemented in the development of the alternatives.

TASK IX: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVES

The Respondent shall describe each corrective measure alternative that clears the Initial Screening Task VIII and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Respondent shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Respondent shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Respondent shall evaluate each alternative in the four following areas:

1. Technical

The Respondent shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

a. The Respondent shall evaluate performance based on the effectiveness and useful life of the corrective measure:

i) Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede the effectiveness of the corrective measure shall be considered. The evaluation should also consider the effectiveness of combinations of technologies.

ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Respondent shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Respondent should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Respondent shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

i) Constructability is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Respondent shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment avaliability, and the location of suitable off-site treatment or disposal facilities.

ii) Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable pre-established level.

d. The Respondent shall evaluate each corrective measure alternative with regard to safety. The evaluation shall include threats to the safety of nearby communities and environments as well as those threats to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental

The Respondent shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathway of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short- and long-term beneficial and adverse effects of the response alternative; and adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health

The Respondent shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the concentrations and characteristics of the contaminants on-site, potential exposure routes, and potentially affected population. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guideline acceptable to EPA.

4. Institutional

The Respondent shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, state and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

A. Cost Estimate

The Respondent shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

   a. Direct capital costs include:

      i) Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.

      ii) Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete.

      iii) Land and site-development costs: Expenses associated with purchase of land and development of existing property; and

      iv) Building and services costs: Costs of process and non-process buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:

i) Engineering expenses: Costs of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;

ii) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permit for installation and operation;

iii) Start-up and shake-down costs: Costs incurred during corrective measure start-up; and

iv) Contingency allowances: Funds to cover costs resulting from unforseen circumstances, such as adverse weather conditions, strikes, and inadequate Facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. Respondents shall consider the following operation and maintenance cost components:

a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;

f. Administrative costs; Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Licensing costs: Costs of such items as licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other: Items that do not fit any of the above categories.

TASK X: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Respondent shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade off among health risks, environmental effects, and other pertinent factors shall be highlighted. The U.S. EPA will select the corrective measure alternative or alternatives to be implemented based on the results of Tasks IX and X. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference.

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environment as well as workers during implementation will be preferred.

B. Human Health

The corrective measure or measures must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

TASK XI: REPORTS

The Respondent shall prepare a Draft Corrective Measure Study (CMS) Report presenting the results of Task VIII through X and recommending a corrective measure alternative. Three (3) copies of the preliminary report shall be provided by the Respondent to EPA for review and for EPA approval. At a minimum the Report shall include:

A. Draft

1. A description of the facility including a site topographic map & preliminary layout,

2. A summary of the corrective measure(s) including,

   a. A description of the corrective measure(s) and rational for selection;

   b. Performance expectations;

   c. Preliminary design criteria and rationale;

   d. General operation and maintenance requirements and long-term monitoring requirements.

3. A summary of the RFI and impact on the corrective measure(s) including,

   a. Field studies (groundwater, surface water, soil, air); and

   b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions including,

   a. Special technical problems;

   b. Additional engineering data required;

   c. Permits and regulatory requirements;

   d. Access, easements, right-of-way;

   e. Health and safety requirements; and

   f. Community relation activities.

B. Final

The Respondent shall finalize the Corrective Measure Study Report incorporating comments received from EPA on the Draft Corrective Measure Study Report. The report shall become final upon EPA approval.

C. Public Review and Final Selection of Corrective Measures

Upon receipt of the Final Corrective Measure Study Report, EPA shall announce its availability to the public for review and comment. At the end of the comment period, EPA shall review the comments and then inform the Respondent of its final decision as to the approved Corrective Measures to be implemented by the Respondent.

APPENDIX H

Copy of Interim Measures and
RFI Workplan Approval Letter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

OCT 23 1991

4WD-RCRA&FFB

Commanding General
Facilities Directorate
NREA Department, Code LN
ATTN: Mr. George Radford
Building 198, Stop 1
Marine Corps Air Station
Cherry Point, North Carolina 28533-5000

RE: Interim Measures/RFI Workplan Review
Marine Corps Air Station, Cherry Point
NC1 170 027 261

Dear Mr. Radford:

The Environmental Protection Agency (EPA), Region IV, is hereby approving the revised Interim Measures and RCRA Facility Investigation Workplans (RFI), dated May 1991, submitted by your facility pursuant to the Section 3008(h) Consent Order. Our review included consideration of both the Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation and Liability Act requirements.

Within fifteen (15) days of receiving this notice of approval, Marine Corps Air Station, Cherry Point, shall commence work and implement the tasks required by the workplans in accordance with the requirements, specifications and schedules stated in the workplans as approved by EPA.

Should you have any questions, please contact Mr. John Lank of my staff at(404) 347-7503.

Sincerely yours,

Michael H. Green, Deputy for

Donald J. Guinyard
Director
Waste Management Division

cc: N. Johnson, Nav Fac Engr Command, Norfolk VA
Jerome Rhodes, NC DEHNR

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